

Exhibit 6

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8 UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
9 SOUTHERN DIVISION

10 XR COMMUNICATIONS, LLC)
d/b/a VIVATO TECHNOLOGIES,)

11 Plaintiff,)

12 v.)

13 D-LINK SYSTEMS, INC., et al.,)

14 Defendants.)

Case No. 8:17-cv-00596-DOC-JDE

LEAD CASE

Hon. David O. Carter

NOTICE OF SPECIAL MASTER

REPORT AND RECOMMENDATION

ON CLAIM CONSTRUCTION

1 Pursuant to authority provided by the December 3, 2021 Order Appointing Special
2 Master (Dkt. No. 260), the Special Master attaches hereto the Special Master Report and
3 Recommendation on Claim Construction.

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5
6 Dated: January 27, 2022 By: /s/ David Keyzer

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Special Master

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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

XR COMMUNICATIONS, LLC)	Case No. 8:17-CV-00596-DOC-JDE
d/b/a VIVATO TECHNOLOGIES)	LEAD CASE
)	Hon. David O. Carter
Plaintiff,)	
)	
v.)	SPECIAL MASTER
)	
D-LINK SYSTEMS, INC., et al.,)	REPORT AND RECOMMENDATION
)	
Defendants.)	ON CLAIM CONSTRUCTION
)	
)	

The undersigned, having been appointed as a Special Master pursuant to Rule 53 of the Federal Rules of Civil Procedure, submits this Report and Recommendation on Claim Construction.

Table of Contents

I. INTRODUCTION	2
II. THE PATENTS-IN-SUIT	3
III. LEGAL STANDARDS	6
IV. AGREED TERMS.....	6
V. THE DISPUTED TERMS IN U.S. PATENT NO. 10,594,376	7
1. “a processor configured to: generate a probing signal for transmission to at least a first client device and a second client device” and “wherein one or more of the processor, the transceiver, or the smart antenna is further configured to:”	7
2. “an 802.11 standard”	32
VI. THE DISPUTED TERMS IN U.S. PATENT NO. 8,289,939	38
3. “wireless input/output (I/O) unit”	38
4. “signal transmission/reception coordination logic”	44
5. “responsive to . . .” Terms	59
6. “one other access point,” “the other signal,” “the access point,” and “the signal”	66
7. “at least one IEEE 802.11 standard”	72
VII. THE DISPUTED TERMS IN U.S. PATENT NO. 7,729,728	74
8. “a beam downlink” and “[a]/[the] different beam downlink”	74
VIII. CONCLUSION.....	80

I. INTRODUCTION

Plaintiff XR Communications, LLC d/b/a Vivato Technologies (“Plaintiff” or “XR” or “Vivato”) asserts United States Patents No. 7,729,728 (“the ’728 Patent”), 8,289,939 (“the ’939 Patent”), and 10,594,376 (“the ’376 Patent”) (collectively, “the patents-in-suit”) against Defendants D-Link Systems, Inc. (“D-Link”), Belkin

1 International, Inc. (“Belkin”), Aruba Networks, Inc. (“Aruba”), Netgear, Inc.
2 (“Netgear”), and Ubiquiti Networks, Inc. (“Ubiquiti”) (all, collectively, “Defendants”).

3 The parties submitted their respective Opening Claim Construction Briefs on
4 November 30, 2021 (Dkt. 256, “Pl. CC Opening”; Dkt. 257, “Defs. CC Opening”). The
5 parties submitted their respective Responsive Claim Construction Briefs on
6 December 23, 2021 (Dkt. 273, “Pl. CC Response”; Dkt. 272, “Defs. CC Response”).
7 Also before the Special Master is the parties’ November 30, 2021 Second Amended
8 Joint Claim Construction and Prehearing Statement (Dkt. 255) and the chart titled
9 “Disputed Terms for Construction” attached as Exhibit A thereto.

10 Pursuant to the Court’s December 3, 2021 Order Appointing Special Master
11 (Dkt. 260), the Special Master entered orders regarding the proceedings¹ and conducted
12 a claim construction hearing on January 18, 2022.

13 Based on the above-cited briefing as well as the oral arguments presented by
14 counsel at the January 18, 2022 hearing, the Special Master construes the disputed terms
15 as set forth herein.

16 II. THE PATENTS-IN-SUIT

17 Plaintiff submits: “The asserted patents disclose improvements to wireless
18 communication routers and switches such as Wi-Fi/802.11 access stations and access
19

20 ¹ (See Dkt. 270-1, Dec. 27, 2021 Special Master Order No. SM-2 (setting claim
construction hearing and regarding conduct of claim construction hearing).)

1 points.” (Pl. CC Opening at 1.)

2 The ’376 Patent, titled “Directed Wireless Communication,” issued on March 17,
3 2020, and bears an earliest priority date of November 3, 2003. Plaintiff submits: “The
4 ’376 Patent focuses on updating the spatial distribution of the beams based on feedback
5 information from connected client devices, like laptops and mobile phones.” (*Id.* at 1.)

6 The Abstract of the ’376 Patent states:

7 Disclosed herein are methods and apparatuses configured to direct wireless
8 communication. In some embodiments, a networking apparatus is
9 configured to generate a plurality of sequences of symbols for transmission
10 to plurality of client devices; transmit the plurality of sequences to the
11 plurality of client device via one or more beams focused toward the client
12 devices; receive information regarding the one or more beams from the
13 client devices; and modify at least one of the one or more beams based on
14 the information.

15 The ’939 Patent, titled “Signal Communication Coordination,” issued on
16 October 16, 2021, and bears an earliest priority date of November 4, 2002. Plaintiff
17 submits: “The ’939 Patent focuses on adaptive channel assignment to mitigate
18 interference where multiple access points are established.” (*Id.*) The Abstract of the
19 ’939 Patent states:

20 An exemplary access station for wireless communications includes: a
wireless input/output unit that is configured to establish multiple access
points; and signal transmission/reception coordination logic that is capable
of ascertaining that an access point of the multiple access points is receiving
a signal and that is adapted to restrain at least one other access point of the
multiple access points from transmitting another signal responsive to the
ascertaining that the access point is receiving the signal. An exemplary
method includes: monitoring multiple respective indicators acquired from
multiple respective baseband units; detecting whether at least one respective

1 indicator of the multiple respective indicators is affirmatively indicating that
2 a signal is being received; and if so, providing at least one instruction to at
3 least two medium access controllers of multiple respective medium access
4 controllers, the at least one instruction restraining the at least two medium
5 access controllers from causing a transmission.

6 The '728 Patent, titled "Forced Beam Switching in Wireless Communication
7 Systems Having Smart Antennas," issued on June 1, 2010, and bears an earliest priority
8 date of November 4, 2002. Plaintiff submits: "The '728 Patent focuses on associating
9 clients with beams based on the current location of the client devices." (*Id.*) The
10 Abstract of the '728 Patent states:

11 Methods and apparatuses are provided which allow a wireless communication
12 system using a smart antenna(s) to selectively cause a receiving device to
13 switch its operative association from one transmitted beam to another
14 available transmitted beam.

15 Defendants note that *Inter Partes* Review ("IPR") proceedings conducted by the
16 Patent Trial and Appeal Board ("PTAB") of the United States Patent and Trademark
17 Office ("PTO") invalidated some of the claims of the '728 Patent. In the present case,
18 Plaintiff asserts claims that were not invalidated in the prior IPR proceedings.
19 Defendants submit: "Because the newly asserted '728 claims are substantively the same
20 as claims that were cancelled in the IPR proceedings as obvious, defendants Cisco and
Aruba requested reexamination of the newly asserted claims, based on the same prior art.
On November 17, 2021, the USPTO granted Cisco and Aruba's request and initiated
reexamination proceedings." (Defs. CC Opening at 1 n.2.)

III. LEGAL STANDARDS

The Court has set forth relevant legal principles in, for example, *Spigen Korea Co. Ltd. v. Lijun Liu, et al.*, No. 2:16-CV-09185-DOC-DFM, Dkt. 215, 2018 WL 8130608, slip op. at 10–11 (C.D. Cal. Dec. 12, 2018), and *Limestone Memory Systems, LLC v. Micron Technology, Inc.*, No. 8:15-CV-00278-DOC-KES, Dkt. 242, 2019 WL 6655273, slip op. at 2–8 (C.D. Cal. Sept. 11, 2019). For example, the Court noted that “[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Spigen Korea*, No. 2:16-CV-09185-DOC-DFM, Dkt. 215, slip op. at 10 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)).

IV. AGREED TERMS

In their November 30, 2021 Second Amended Joint Claim Construction and Prehearing Statement (Dkt. 255 at 2), the parties submitted the following:

<u>Term</u>	<u>Agreed Construction</u>
“transmission peaks . . . within one or more spatially distributed patterns of electromagnetic signals” (’376 Pat., Cls. 1, 12, 22, 30, 32)	“portions of one or more spatially distributed patterns of electromagnetic signals where transmissions of significant energy are selectively directed”
“transmission nulls within one or more spatially distributed patterns of electromagnetic signals” (’376 Pat., Cls. 1, 8–9, 12, 22, 30, 32)	“portions of the one or more spatially distributed patterns of electromagnetic signals where transmissions of no or insignificant energy are selectively directed”

V. THE DISPUTED TERMS IN U.S. PATENT NO. 10,594,376

1. “a processor configured to: generate a probing signal for transmission to at least a first client device and a second client device” and “wherein one or more of the processor, the transceiver, or the smart antenna is further configured to:”

“a processor configured to: generate a probing signal for transmission to at least a first client device and a second client device”
(’376 Patent, Claims 1, 12, 22, 32)

Plaintiff’s Proposed Construction

Defendants’ Proposal

No construction necessary; not governed by 35 U.S.C. § 112(6).

Governed by 35 U.S.C. § 112, ¶6, and indefinite

Alternative proposed construction, should the term be treated as means-plus-function:

Function:

Function:

generate a probing signal for transmission to at least a first client device and a second client device

Claims 1, 12, 22, 32:
generate a probing signal for transmission to at least a first client device and a second client device

Structure:

Signal Control and Coordination Logic 304 and/or Multi Beam Controller 816 and/or Scanning Receiver 822 and/or MAC Coordinator Logic 904 and/or Ethernet Switch/Router 908 and/or col. 15:59–16:43 and/or col. 6:1–7:5, and/or baseband 902 and/or 20:30–44 and/or 22:44–58 and/or 25:29–43 and/or step 1108 in col. 23, and equivalents thereof

Structure:

None disclosed

“wherein one or more of the processor, the transceiver, or the smart antenna is further configured to:”

(’376 Patent, Claims 1–6, 10, 12–17, 22–29, 32–34)

Plaintiff’s Proposed Construction

Defs.’ Construction

No construction necessary; not governed by 35 U.S.C. § 112(6).

Indefinite

Alternative proposed construction, should the term be treated as means-plus-function:

“wherein . . . the processor . . . is further configured to:” is governed by 35 U.S.C. § 112, ¶6, and indefinite

Function:

Function:

the functions identified after the text “one or more of the processor, the transceiver, or the smart antenna is further configured to:” that appears in each of claims 1–6, 10, 12–17, 22–29, 32–34, *e.g.*,

Claims 1, 12, 22, 32:

Claim 1: receive a first feedback information from the first client device in response to the transmission of the probing signal; receive a second feedback information from the second client device in response to the transmission of the probing signal; determine where to place transmission peaks and nulls within one or more spatially distributed patterns of electromagnetic signals based in part on the first and second feedback information; transmit the first data stream to the first client device via the one or more spatially distributed patterns of electromagnetic signals; transmit the second data stream to the second client device via the one or more spatially distributed patterns of electromagnetic signals; wherein transmission of the first data stream and transmission of at least part of the second data stream occur at the same time; and wherein the one or more spatially distributed patterns of electromagnetic signals are configured to exhibit a first transmission peak at the location of the first client device and a second transmission peak at a location of the second client device.

“receive a first feedback information from the first client device in response to the transmission of the probing signal”

“receive a second feedback information from the second client device in response to the transmission of the probing signal”

“determine where to place transmission peaks and transmission nulls within one or more spatially distributed patterns of electromagnetic signals

Claim 2: determine a first set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals.

Claim 3: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a first set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals.

Claim 4: transmit a third data stream to the first client device via the modified one or more spatially distributed patterns of electromagnetic signals.

Claim 5: determine a second set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals, wherein the first set of weights and the second set of weights are different.

Claim 6: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals; and transmit a third data stream to the second client device via the modified one or more spatially distributed patterns of electromagnetic signals.

Claim 10: support the first and second client devices in accordance with an 802.11 standard

Claim 12: receive a first feedback information from the first client device; receive a second feedback information from the second client device; determine where to place transmission peaks and nulls within one or more spatially distributed patterns of electromagnetic signals based in part on the first and second feedback information; transmit the first data stream to the first client device via the one or more spatially distributed patterns of electromagnetic signals; transmit the second data stream to the second client device via the one or

based in part on the first and the second feedback information”

“transmit the first data stream to the first client device via the one or more spatially distributed patterns of electromagnetic signals”

“transmit the second data stream to the second client device via the one or more spatially distributed patterns of electromagnetic signals”

Claims 2, 13, 23, 33:

“determine a first set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals”

Claims 3, 14, 25, 34:

“modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a first set of weights to manipulate the one or more spatially

1	more spatially distributed patterns of electromagnetic signals; wherein transmission of the first data stream	distributed patterns of electromagnetic signals”
2	and transmission of at least part of the second data stream occur at the same time; and wherein the one or	
3	more spatially distributed patterns of electromagnetic signals are configured to exhibit a first transmission	Claims 4, 15, 26:
4	peak at the location of the first client device, a second transmission peak at a location of the second client	“transmit a third data stream to the first client device via the modified one or more spatially distributed patterns of electromagnetic signals”
5	device, and a first transmission null at a location of a third device.	
6		
7	Claim 13: determine a first set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals.	
8		Claims 5, 16, 24, 27:
9	Claim 14: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment	“determine a second set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals, wherein the first set of weights and the second set of weights are different”
10	of a first set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals.	
11	Claim 15: transmit a third data stream to the first client device via the modified one or more spatially distributed	
12	patterns of electromagnetic signals.	
13	Claim 16: determine a second set of weights to apply to the one or more spatially distributed patterns of	
14	electromagnetic signals, wherein the first set of weights and the second set of weights are different.	Claims 6, 17, 29:
15		
16	Claim 17: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment	“modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals”
17	of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals;	
18	and transmit a third data stream to the second client device via the modified one or more spatially distributed	
19	patterns of electromagnetic signals	
20	Claim 22: receive a first feedback information from the first client device, wherein the first feedback information comprises one or more of a first amplitude	

information, a first phase information, a first routing information, or a first index to a routing table; receive a second feedback information from the second client device, wherein the second feedback information comprises one or more of a second amplitude information, a second phase information, a second routing information, or a first second to a routing table; determine where to place transmission peaks and nulls within one or more spatially distributed patterns of electromagnetic signals based in part on the first and second feedback information; transmit the first data stream to the first client device via the one or more spatially distributed patterns of electromagnetic signals; transmit the second data stream to the second client device via the one or more spatially distributed patterns of electromagnetic signals; wherein transmission of the first data stream and transmission of at least part of the second data stream occur simultaneously; and wherein the one or more spatially distributed patterns of electromagnetic signals are configured to exhibit a first transmission peak at the location of the first client device and a second transmission peak at a location of the second client device

Claim 23: determine a first set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals.

Claim 24: determine a second set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals, wherein the first set of weights and the second set of weights are different.

Claim 25: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals.

Claim 26: transmit a third data stream to the first client device via the modified one or more spatially distributed

“transmit a third data stream to the second client device via the modified one or more spatially distributed patterns of electromagnetic signals”

Claim 28:

“modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of the second set of weights to the one or more spatially distributed patterns of electromagnetic signals”

“transmit a fourth data stream to the second client device via the modified one or more spatially distributed patterns of electromagnetic signals”

Structure:

None disclosed

patterns of electromagnetic signals.

Claim 27: determine a second set of weights to apply to the one or more spatially distributed patterns of electromagnetic signals, wherein the first set of weights and the second set of weights are different.

Claim 28: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals; and transmit a fourth data stream to the second client device via the modified one or more spatially distributed patterns of electromagnetic signals.

Claim 29: modify the one or more spatially distributed patterns of electromagnetic signals based on adjustment of a second set of weights to manipulate the one or more spatially distributed patterns of electromagnetic signals; and transmit a third data stream to the second client device via the modified one or more spatially distributed patterns of electromagnetic signals.

Claim 32: receive a first feedback information from the first client device, wherein the first feedback information comprises one or more of a first amplitude information, a first phase information, a first routing information, or a first index to a routing table; receive a second feedback information from the second client device, wherein the second feedback information comprises one or more of a second amplitude information, a second phase information, a second routing information, or a first second to a routing table; determine where to place transmission peaks and nulls within one or more spatially distributed patterns of electromagnetic signals based in part on the first and second feedback information; transmit the first data stream to the first client device via the one or more spatially distributed patterns of electromagnetic signals; transmit the second data stream to the second client

1 device via the one or more spatially distributed patterns
2 of electromagnetic signals; wherein transmission of the
3 first data stream and transmission of at least part of the
4 second data stream occur simultaneously; and wherein
5 the one or more spatially distributed patterns of
6 electromagnetic signals are configured to exhibit a first
7 transmission peak at the location of the first client
8 device and a second transmission peak at a location of
9 the second client device, and a first transmission null at
10 a location of a third device

11
12 Claim 33: determine a first set of weights to apply to the
13 one or more spatially distributed patterns of
14 electromagnetic signals

15 Claim 34: modify the one or more spatially distributed
16 patterns of electromagnetic signals based on adjustment
17 of a first set of weights to manipulate the one or more
18 spatially distributed patterns of electromagnetic signals

19 Structure:

20 Signal Control and Coordination Logic 304 and/or
Beam-Forming Networks 808 / 810 and/or Scanning
Receiver 822 and/or MAC Coordinator Logic 904
and/or Scanning Logic 1008 and/or Antenna Array 302
and/or Transceivers 804 and/or col. 16:36–49 and/or
col. 6:1–7:5 and/or col. 5:5–67 and/or Multi-Beam
Controller 822 and/or baseband processor 902 and/or
20:30–44 and/or 22:44–58 and/or 25:29–43 and/or step
1108 in col. 23, and equivalents thereof

(Dkt. 255-1 at 1–13.)

(a) The Parties' Positions

Plaintiff argues that Defendants cannot overcome the presumption against means-plus-function treatment for this non-means term. (Pl. CC Opening at 1–2.) Plaintiff

1 urges that the context provided by claim language, as well as disclosures in the
2 specification, reinforce that the word “processor” connotes structure here. (*See id.* at 3–
3 7.) Plaintiff also cites the opinions of its expert. (*See id.* at 7–8.) Further, Plaintiff
4 argues that this analysis is not affected by whether the claimed structure is recited as
5 performing novel functions (and, alternatively, Plaintiff submits that a “processor” can
6 indeed perform the recited functions). (*See id.* at 8–10 & 12.) Finally, Plaintiff argues
7 that “even if the term ‘processor’ is not sufficiently definite as a term for structure
8 viewed in isolation, the inputs, outputs, connections, and operation of the ‘processor’
9 disclosed in the claims do recite sufficient structure.” (*Id.* at 11.) Alternatively, Plaintiff
10 submits that “the ’376 patent specification discloses the corresponding structure of a
11 ‘baseband processor 902’ as the specific type of processor that performs the claimed
12 function of generating a probing signal for transmission to at least a first client device
13 and a second client device.” (*Id.* at 2; *see id.* at 13–15 (discussing “baseband processor
14 902” and “baseband unit 902”).)

15 Plaintiff presents substantially the same arguments as to “wherein one or more of
16 the processor, the transceiver, or the smart antenna is further configured to:” (*See*
17 *id.* at 15–19.)

18 Defendants argue that “the term ‘processor’ itself does not inform a POSA as to
19 any particular structure for performing the claimed functions.” (Defs. CC Opening at 7.)
20 Defendants urge that a “processor” is a generic computing element that interprets and

1 executes instructions, and “a processor’s structure is defined by the instructions it
2 executes.” (*Id.* (citation omitted).) Defendants argue that “[t]he fact that a POSA would
3 recognize the term ‘processor’ does not mean that a POSA would associate any specific
4 structure with the term, much less structure sufficient for performing the claimed
5 functions.” (*Id.*; *see id.* at 9.) Defendants also argue:

6 On the one hand, XR contends that the term processor is not in need of
7 construction, *i.e.*, a plain and ordinary meaning applies. Yet, on the other
8 hand, XR’s expert effectively contends that processor should be construed
9 to be a baseband processor, signal processor, or the equivalent. XR’s expert
10 appears to take this position because he recognizes that “processor” by itself
11 lacks structure and by limiting the scope of processor to certain types of
12 processors, he tries to impart structure to the claimed processor. Yet, not
13 even XR’s expert could identify any such specific structure; in part, because
14 baseband processors and signal processors are wholly distinct processor
15 structures that could be implemented in numerous and varying ways.

16 (*Id.* at 6 (citations omitted); *see id.* at 8.) As to the claimed functions, Defendants argue
17 that “[b]ecause the ’376 Patent claims require that at least one of processor, transceiver,
18 or smart antenna alone performs all the recited functions, the claim must contemplate
19 that the processor performs all the recited functions and the specification needs to
20 disclose corresponding structure for performing each function.” (*Id.* at 12.) As to
corresponding structure, Defendants argue:

XR’s reference to “Structure” (Second Amended JCCS, Ex. A, pp. 1, 13)
includes a cobbled together list of ten different types of logic, networks, etc.
and more than three columns of disjointed text from the specification.
Because XR has not associated any particular structure with each claimed
function, it is difficult for Defendants to respond. That being said, it is clear
that none of the “structure” cited by XR is linked to the performance of at
least the following functions:

1 1. “generate a probing signal for transmission to at least a first
2 client device and a second client device”

3 4./5. “receive a [first/second] feedback information from the
4 [first/second] client device in response to the transmission
of the probing signal”

5 6. “determine where to place transmission peaks and
6 transmission nulls within one or more spatially distributed
patterns of electromagnetic signals based in part on the first
7 and the second feedback information”

8 (*Id.* at 12; *see id.* at 13–16.)

9 Plaintiff responds that “‘processor’ refers to the class of structures that covers
10 baseband and signal processors, which renders it a sufficiently definite term for
11 structure.” (Pl. CC Response at 3.) Plaintiff argues that “[a] POSA knows what a
12 processor is, and that does not change simply because the ’376 claims require the
13 processor to perform certain operations, such as generate probing signals for
14 transmission.” (*Id.* at 1.) Plaintiff also argues that the claims provide structural
15 information about the processor and also explain how the processor interacts with other
16 components. (*Id.* at 2; *see id.* at 3.) For example, Plaintiff submits “the ’376 Patent
17 processor is ‘coupled to’ a ‘transceiver,’ and no one disputes that transceiver is a definite
18 structure.” (*Id.* at 9.) Further, Plaintiff cites *Samsung Electronics America, Inc. v.*
19 *Prisua Engineering Corp.*, 948 F.3d 1342, 1353–54 (Fed. Cir. 2020) (discussing “digital
20 processing unit”). (Pl. CC Response at 4.) Finally, Plaintiff argues: “Defendants seek to
invert the Federal Circuit’s logic. Defendants believe that even if a term recites

1 sufficiently definite structure, it still triggers §112(6) if the structure is not widely known
2 to be capable of performing the claimed functions. The Federal Circuit held no such
3 thing.” (*Id.* at 9 (discussing *Egenera, Inc. v. Cisco Sys.*, 972 F.3d 1367, 1375 (Fed. Cir.
4 2020)). Alternatively, Plaintiff submits that “Defendants’ expert, Dr. Acampora, never
5 disputes Dr. Vojcic’s opinion that a baseband processor is capable of performing the
6 claimed function,” and Plaintiff also argues that, even if this term is deemed to be
7 means-plus function, “the ’376 Patent discloses ‘baseband processor 902’ / ‘baseband
8 unit 902’ as corresponding structure clearly linked to performing the claimed function.”
9 (Pl. CC Response at 13; *see id.* at 13–15.)

10 Defendants respond that Plaintiff misunderstands the legal standards regarding
11 35 U.S.C. § 112, ¶ 6, and Defendants submit that the Northern District of California
12 rejected Plaintiff’s approach in *XR Commc’ns, LLC v. Ruckus Wireless, Inc.*, No. 18-CV-
13 01992-WHO, 2021 WL 3918136 (N.D. Cal. Sep. 1, 2021) (“*Ruckus*”). (Def. CC
14 Response at 1.) Defendants urge that “[a]lthough there are cases where courts have
15 declined to find that certain ‘processor’ terms are means-plus-function limitations, courts
16 have repeatedly found that ‘processor’ terms *are* means-plus-function limitations when
17 (as here) the claim does not specify how the processor operates to perform the recited
18 function.” (*Id.* at 3.) Further, Defendants argue that “the alleged inputs, outputs and
19 connections are not described in the claim in a way that would inform a POSITA about
20 how the claimed processor performs the claimed functions.” (*Id.* at 7.) For example,

1 more specifically, Defendants argue that “the fact that the processor is connected to a
2 transceiver and, presumably outputs something to a transceiver does not inform a
3 POSITA as to the structure of the processor that generates probing signals, receives
4 feedback, and uses the feedback to determine the placement of peaks, which are among
5 the relevant claimed functions.” (*Id.* at 8.) As to Plaintiff’s alternative proposal,
6 Defendants argue that “‘baseband processor’ does not define any particular structure, no
7 less a structure for performing the claimed functions, such as generating a probing
8 signal, and XR’s only evidence that the baseband processor is even capable of
9 performing the recited functions, is its own expert’s *ipse dixit*.” (*Id.* at 9.) Defendants
10 further argue that “baseband processor 902” is not clearly linked to the claimed
11 functions. (*See id.* at 10–13.)

12 At the January 18, 2022 hearing, the parties presented oral arguments regarding
13 these terms.

14 (b) Analysis

15 Title 35 U.S.C. § 112(f) provides: “An element in a claim for a combination may
16 be expressed as a means or step for performing a specified function without the recital of
17 structure, material, or acts in support thereof, and such claim shall be construed to cover
18 the corresponding structure, material, or acts described in the specification and
19 equivalents thereof.” “In exchange for using this form of claiming, the patent
20 specification must disclose with sufficient particularity the corresponding structure for

1 performing the claimed function and clearly link that structure to the function.” *Triton*
2 *Tech of Tex., LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1378 (Fed. Cir. 2014).

3 Title 35 U.S.C. § 112(f) does not apply if “the words of the claim are understood
4 by persons of ordinary skill in the art to have sufficiently definite meaning as the name
5 for structure.” *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015).

6 “[T]he failure to use the word ‘means’ . . . creates a rebuttable presumption . . . that
7 § 112[(f)] does not apply.” *Id.* at 1348 (citations and internal quotation marks omitted).

8 “When a claim term lacks the word ‘means,’ the presumption can be overcome and
9 § 112[(f)] will apply if the challenger demonstrates that the claim term fails to recite
10 sufficiently definite structure or else recites function without reciting sufficient structure
11 for performing that function.” *Id.* at 1349 (citations and internal quotation marks
12 omitted).

13 The Federal Circuit in *Williamson v. Citrix Online LLC*, sitting en banc, abrogated
14 any “strong” presumption against applying 35 U.S.C. § 112(f) to terms that do not use
15 the word “means” and abrogated prior statements that the presumption “is not readily
16 overcome” and cannot be overcome “without a showing that the limitation essentially is
17 devoid of anything that can be construed as structure.” 792 F.3d at 1348–49 (citations
18 omitted). “Henceforth, we will apply the presumption as we have done prior to *Lighting*
19 *World . . .*” *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354,
20 1358 (Fed. Cir. 2004)). In a portion of the decision not considered en banc, *Williamson*

1 affirmed the district court’s finding that the term “distributed learning control module”
2 was a means-plus-function term that was indefinite because of lack of corresponding
3 structure, and in doing so *Williamson* stated that “‘module’ is a well-known nonce
4 word.” 792 F.3d at 1350.

5 “In undertaking this analysis we ask if the claim language, read in light of the
6 specification, recites sufficiently definite structure to avoid §112[(f)].” *Media Rights*
7 *Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (quoting
8 *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)); *see MTD*
9 *Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341–43 (Fed. Cir. 2019).

10 Claim 1 of the ’376 Patent, for example, recites (emphasis added):

- 11 1. A data-communications networking apparatus, comprising:
12 a processor configured to:
13 generate a probing signal for transmission to at least a first
14 client device and a second client device;
15 generate a first data stream for transmission to the first
16 client device; and
17 generate a second data stream for transmission to the
18 second client device; and
19 a transceiver operatively coupled to the processor and configured to:
20 transmit the probing signal to at least the first client device
 and the second client device via a smart antenna;
 wherein the smart antenna is operatively coupled to the
 transceiver and comprises a first antenna element and a
 second antenna element;
 wherein one or more of the processor, the transceiver, or the smart
 antenna is further configured to:
 receive a first feedback information from the first client
 device in response to the transmission of the probing
 signal;
 receive a second feedback information from the second

1 client device in response to the transmission of the
2 probing signal;
3 determine where to place transmission peaks and
4 transmission nulls within one or more spatially
5 distributed patterns of electromagnetic signals based in
6 part on the first and the second feedback information;
7 transmit the first data stream to the first client device via the
8 one or more spatially distributed patterns of
9 electromagnetic signals; and
10 transmit the second data stream to the second client device
11 via the one or more spatially distributed patterns of
12 electromagnetic signals;
13 wherein transmission of the first data stream and
14 transmission of at least part of the second data stream
15 occur at the same time; and
16 wherein the one or more spatially distributed patterns of
17 electromagnetic signals are configured to exhibit a first
18 transmission peak at a location of the first client device
19 and a second transmission peak at a location of the
20 second client device.

11 This “processor” term does not use any of the words identified by *Williamson* as a
12 “nonce” word lacking structure, *see* 792 F.3d at 1350, and although “processor” may
13 refer to a broad class of structures, this breadth does not necessarily render the term non-
14 structural. *See Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1019 (Fed. Cir. 2017) (as
15 to “wireless device means,” “it is sufficient if the claim term is used in common parlance
16 or by persons of skill in the pertinent art to designate structure, even if the term covers a
17 broad class of structures and even if the term identifies the structures by their function”)
18 (quoting *TecSec, Inc. v. Int’l Bus. Machs. Corp.*, 731 F.3d 1336, 1347 (Fed. Cir. 2013)).
19 Even more recently, the Federal Circuit similarly addressed a “digital processing unit”
20 term:

1 As used in the claims of the '591 patent, the term “digital processing unit”
2 clearly serves as a stand-in for a “general purpose computer” or a “central
3 processing unit,” each of which would be understood as a reference to
structure in this case, not simply any device that can perform a particular
function.

4 *Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1354 (Fed. Cir. 2020).

5 Ample authority of the Federal Circuit thus supports finding that the term
6 “processor” connotes structure. *See id.*; *cf. Linear Tech. Corp. v. Impala Linear Corp.*,
7 379 F.3d 1311, 1320–21 (Fed. Cir. 2004) (finding that “circuit” terms connoted
8 structure). The opinions of Plaintiff’s expert are further persuasive in this regard. (*See*
9 Pl. CC Opening, Ex. 4, Nov. 2, 2021 Wojcik Decl. at ¶¶ 26–32.) This is also consistent
10 with disclosures regarding, for example, “baseband processor 902” (*see, e.g.*, '376 Patent
11 at 18:9–24 & 25:29–43), and the recital of the “processor” in relation to other
12 components further reinforces the structural nature of the “processor.” (*See* Pl. CC
13 Opening, Ex. 4, Nov. 2, 2021 Wojcik Decl. at ¶¶ 33–40 & 63–69.)

14 Defendants cite the opinion of their expert that transmit and receive signal
15 processors, such as disclosed in the specification, are not structures that a person of
16 ordinary skill in the art would understand to be capable of, for example, generating a
17 probing signal or “beamforming” (“determin[ing] where to place transmission peaks and
18 nulls within one or more spatially distributed patterns of electromagnetic signals based in
19 part on the first and second feedback information”). (Defs. CC Opening, Ex. 3, Nov. 2,
20 2021 Acampora Decl. at ¶¶ 134, 146–49, 165 & 171.) Defendants likewise cite the

1 opinion of their expert that the disclosed baseband processors (*see, e.g.*, '376 Patent at
2 Figs. 9 and 13) are not capable of, for example, “generating” a probing signal or
3 “determin[ing]” where to place peaks and nulls based on feedback information. (*Id.* at
4 ¶¶ 134 & 150.)

5 Defendants’ arguments in this regard perhaps might bear on issues of enablement
6 or written description but do not present any issue for claim construction. Any purported
7 inadequately of the particular processors disclosed in the specification is *not* inconsistent
8 with the word “processor” connoting structure for purposes of determining whether 35
9 U.S.C. § 112, ¶ 6 applies. Plaintiff’s counterarguments regarding the disclosed
10 processors (*see* Pl. CC Response at 5–8) therefore need not be addressed in this analysis.

11 The *Egenera* case emphasized by Defendants does not compel otherwise. *See*
12 *Egenera, Inc. v. Cisco Systems, Inc.*, 972 F.3d 1367 (Fed. Cir. 2020). In that case, the
13 Federal Circuit affirmed a finding that “logic to modify said received messages to
14 transmit said modified messages to the external communication network and to the
15 external storage network” was a means-plus-function term governed by 35 U.S.C. § 112,
16 ¶ 6. *See id.* at 1373–75. In particular, the Federal Circuit explained:

17 On appeal, Egenera, pointing to its expert’s explanation and dictionary
18 definitions, argues that “‘logic’ is a common term of art meaning software,
19 firmware, circuitry, or [a] combination thereof.” As Cisco argues, “logic”
20 as used in the claims means only a “general category of whatever may
perform” the function. [*Cf. Williamson*, 792 F.3d at 1350 (“‘[M]odule’ is
simply a generic description for software or hardware that performs a
specified function.”)].

1 The question is not whether a claim term recites *any* structure but whether it
2 recites *sufficient* structure—a claim term is subject to § 112(f) if it recites
3 “function without reciting sufficient structure *for performing that function.*”
4 *Williamson*, 792 F.3d at 1348 (emphasis added) (quoting *Watts*, 232 F.3d at
5 880). Egenera does not explain how its “logic”—even assuming it connotes
6 some possible structure in the general sense of software, firmware, or
7 circuitry—amounts to “sufficient structure for performing [the
8 modification] function.” *See id.* (emphasis added).

9 Egenera also argues that the “larger claim context” indicates that “logic” is
10 structural because the “logic to modify” is part of a supposedly structural
11 component—the “control node.” Appellant’s Br. 52; Reply Br. 22. But
12 that is not enough. Mere inclusion of a limitation within a structure does
13 not automatically render the limitation itself sufficiently structural. And,
14 again, the question is not whether “logic” is utterly devoid of structure but
15 whether the claim term recites sufficient structure to perform the claimed
16 functions.

17 *Id.* at 1374 (citations omitted).

18 In the present case, Defendants emphasize the statements in *Egenera* regarding
19 “whether the claim term recites sufficient structure to perform the claimed functions.”
20 *Id.* Notably, at the outset the Federal Circuit agreed with the patent challenger that the
“logic” term there at issue referred merely to whatever may perform the recited function:
“As Cisco argues, ‘logic’ as used in the claims means only a ‘general category of
whatever may perform’ the function.” *Id.* The Federal Circuit also then referred to
“logic” as merely “some possible structure” in the general sense of software, firmware,
or circuitry, thus reinforcing that “logic” as used in the claims there at issue did not
connote any particular class of structures.

Thus, *Egenera* did *not* set aside the well-established principle that a term can

1 connote structure “even if the term covers a broad class of structures and even if the term
2 identifies the structures by their function.” *Skky*, 859 F.3d at 1019; *see, e.g., TEK*
3 *Global, S.R.L. v. Sealant Sys. Int’l, Inc.*, 920 F.3d 777, 786 (Fed. Cir. 2019) (“connoting
4 precise physical structure is not a necessary condition to avoid § 112, ¶ 6 application”).

5 As discussed above, in the present case the “processor” terms refer to a class of
6 structures. The additional statements in *Egenera* regarding “sufficient structure for
7 performing that function,” *Egenera*, 972 F.3d at 1374, therefore do not compel setting
8 aside the above-discussed authorities finding that a term such as “processor” connotes a
9 class of structures such that the presumption against means-plus-function treatment is not
10 rebutted.

11 Also, as to the recited functions that “one or more of the processor, the
12 transceiver, or the smart antenna is further configured to” perform, Defendants do not
13 persuasively show that the processor, alone, is necessarily configured to perform all of
14 these functions. The prosecution history cited by Defendants, which replaced “are
15 further configured” with “is further configured,” does not change the proper reading of
16 the claims in this regard. (*See* Def. CC Opening, Ex. 7, June 20, 2018 Office Action
17 Response.) Instead, the claim language can be met by “one or more” being so
18 configured.

19 Alternatively and in addition, Plaintiff’s expert persuasively opines that a
20 processor in the relevant art would be able to perform the various functions recited by

1 the claims, such as generating probing signals and data streams. (See Pl. CC Opening,
2 Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶¶ 28, 33, 45–56, 58–59, 63–69, 84 & 89.) This
3 remains true even if the “processor” must be able to perform all eight of the functions
4 identified by Defendants, namely:

- 5 1. “generate a probing signal for transmission to at least a first client device
6 and a second client device”;
- 7 2. “generate a first data stream for transmission to the first client device”;
- 8 3. “generate a second data stream for transmission to the second client
9 device”;
- 10 4. “receive a first feedback information from the first client device in
11 response to the transmission of the probing signal”;
- 12 5. “receive a second feedback information from the second client device in
13 response to the transmission of the probing signal”;
- 14 6. “determine where to place transmission peaks and transmission nulls
15 within one or more spatially distributed patterns of electromagnetic signals
16 based in part on the first and the second feedback information”;
- 17 7. “transmit the first data stream to the first client device via the one or
18 more spatially distributed patterns of electromagnetic signals”; and
- 19 8. “transmit the second data stream to the second client device via the one
20 or more spatially distributed patterns of electromagnetic signals.”

(Def. CC Opening at 10–11.)

Defendants cite deposition testimony of Plaintiff’s expert, such as that a “general
purpose computer . . . wouldn’t be the one that processes these wireless signals” (Defs.
CC Opening, Ex. 5, Nov. 12, 2021 Vojcic dep. at 57:16–58:2), but Defendants have not

1 undermined the opinion of Plaintiff’s expert that the word “processor” connotes
2 structure. (*See id.* at 39:1–19 (discussing that “general purpose computer” is different
3 from a “processor” in the context of wireless devices); *see also id.* at 43:9–44:6 & 45:1–
4 19.) Likewise, Defendants cite testimony by Plaintiff’s expert that multiple different
5 types of processors could be used (*see id.* at 53:11–54:13 & 54:23–55:13), but this is
6 consistent with the term “processor” referring to a broad category of structures.

7 Plaintiff persuasively distinguishes the *Parity Networks* case, cited by Defendants,
8 as involving indefinite functions and as lacking any recital of connections to structural
9 components. *See Parity Networks LLC v. ZyXEL Commc’ns, Inc.*, No. SACV 20-697
10 JVS (KESx), 2020 WL 8569299, at *10–*11 (C.D. Cal. Dec. 22, 2020) (“packet
11 processor”).

12 Defendants further cite the Court’s analysis of the term “activation control circuit”
13 in *Limestone Memory Systems, LLC v. Micron Technology, Inc.*, No. 8:15-CV-278-
14 DOC, 2019 WL 6655273, at *18 (C.D. Cal. Sept. 11, 2019) (Carter, J.). The Court noted
15 that “the *Williamson* test does not require an absolute lack of structure to invoke Section
16 112, ¶ 6.” *Id.* The Court also noted the opinion of an expert that “an infinite number of
17 different logic gate combinations may perform the function,” and the Court found that
18 the relevant claim language “says nothing about the structure of the circuit.” *Id.*, at *19.

19 *Limestone* itself noted, however, that “courts have analyzed ‘circuit’ claim terms
20 on a *case-by-case basis* to determine whether the term fails to recite sufficiently definite

1 structure that *performs the claimed function*.” *Id.* (emphasis added). The claim at issue
2 in *Limestone* was Claim 13 of United States Patent No. 6,697,296, which recites:

3 13. A semiconductor device comprising:

4 signal input circuitry including an input buffer for buffering a signal
provided externally and generating an internal signal when the signal input
circuitry is active;

5 register circuitry for storing a signal specifying whether control on
said signal input circuitry by an operation activation signal is valid, said
6 operation activating signal indicating whether an external signal is a valid
signal; and

7 an *activation control circuit* for selectively activating said signal
input circuitry according to said operation activation signal and the signal
8 stored in said register circuitry, said activation control circuit selectively
activating said signal input circuitry according to said operation activation
9 signal when the stored signal in said register circuitry indicates that control
of activation and deactivation on said signal input circuitry by said
10 operation activation signal is valid, and holding said signal input circuitry in
an active state all the times when said stored signal in said register circuitry
11 indicates that the control on said signal input circuitry by said operation
activation signal is invalid.

12 *Limestone* found that the term “activation control circuit” failed to connote
13 sufficient structure for “selectively activating said signal input circuitry . . .” and
14 “holding said signal input circuitry in an active state all the times . . .” *Id.*, at *18–*20.

15 In the present case, the word “processor” refers to a known category of structures, and
16 although that category may be broad, “breadth is not indefiniteness.” *BASF Corp. v.*
17 *Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017) (citation and internal
18 quotation marks omitted). Moreover, as noted above, the claim language itself
19 “describe[s] how the [‘processor’] interacts with other components . . . in a way that . . .
20 inform[s] the structural character of the limitation-in-question.” *Williamson*, 792 F.3d at

1 1351.

2 Plaintiff also persuasively distinguishes the *Syneron* case. The term at issue in
3 *Syneron* was “processor . . . configured to control RF energy supplied to [an RF / a
4 removable] applicator tip.” *See Syneron Med. Ltd. v. Invasix, Inc.*, No. 8:16-CV-00143-
5 DOC-KES, 2018 WL 4696971, at *12–*14 (C.D. Cal. Sept. 5, 2018). *Syneron* found
6 that this term amounted to a recital of an objective without any recital of inputs, outputs,
7 or operations of the recited processor. *See id.* The “processor” in the present case,
8 however, is not a mere “amalgam of elements in the specification.” *Id.*, at *13. Also,
9 *Syneron* involved skin treatments, and the Court noted that “the asserted independent
10 claims are broadly directed to devices and methods for ablating the top layer of a
11 subject’s skin (the stratus corneum) by applying RF energy (i.e., alternative electrical
12 current) to the skin through a plurality of electrodes that are in direct contact with the
13 skin.” *Id.*, at *1 (footnote omitted). In light of this, Plaintiff persuasively argued at the
14 January 18, 2022 hearing that a person of ordinary skill in the art would have a greater
15 degree of understanding of the context of “processor” in the present case (where the
16 “processor” is being used in the context of data communications) as opposed to in
17 *Syneron* (where the “processor” was being used for a skin treatment).

18 Also, as to the discussion in *Syneron* regarding the *St. Isidore* case (*see id.*, at *14
19 (discussing *St. Isidore Research, LLC v. Comerica Inc.*, No. 2:15-CV-1390, 2016 WL
20 4988246, at *14–*15 (E.D. Tex. Sep. 19, 2016))), the analysis set forth in *SyncPoint*

1 *Imaging, LLC v. Nintendo of Am. Inc.*, No. 2:15-CV-247, 2016 WL 55118, at *18–*21
2 (E.D. Tex. Jan. 5, 2016), is more persuasive as to the particular “processor” terms at
3 issue in the present case.

4 Further, the *Synchronoss* case cited by Defendants did not involve any “processor”
5 terms and is unpersuasive as well. *See Synchronoss Techs., Inc. v. Dropbox Inc.*, No. 16-
6 CV-00119, 2017 WL 6059302, at *7 (N.D. Cal. Dec. 7, 2017) (Gilliam, J.)

7 Defendants point out that some of the authority cited by Plaintiff notes that “in
8 cases where system or apparatus claims including the term ‘processor’ were found to
9 invoke Section 112, paragraph 6, courts have explained that the claimed ‘processor’
10 failed to convey to the person of skill in the art ‘anything about the internal
11 components, structure, or specific operation of the processor.’” *Techno View IP, Inc. v.*
12 *Facebook Techs., LLC*, No. 17-386, 2018 WL 6427874, at *6 (D. Del. Dec. 7, 2018)
13 (Burke, J.) (citing, e.g., *Velocity Patent LLC v. FCA US LLC*, No. 13-CV-8419, 2018
14 WL 4214161, at *8 & n.16 (N.D. Ill. Sep. 4, 2018) & *GoDaddy.com, LLC v. RPost*
15 *Commcn’s Ltd.*, No. CV-14-00126-PHX-JAT, 2016 WL 212676, at *55–*57 (D. Ariz.
16 Jan. 19, 2016)). Also, the parties do not appear to dispute the general proposition cited
17 by Defendants that a term being recited in relation to a structure is not necessarily
18 sufficient, by itself, to find that the term connotes structure. *See MTD Prods.*, 933 F.3d
19 at 1344 (discussing “mechanical control assembly” that was recited as “coupled to the
20 left and right drive units” in a vehicle).

1 On balance, in addition to the above-discussed Federal Circuit authorities, the
2 *Nomadix, Odyssey Wireless, Quanergy, Align Technology, Fisher-Rosemount*, and
3 *Techno View* cases cited by Plaintiff carry persuasive weight in favor of finding that
4 “processor” as used in the language here at issue connotes structure. *Nomadix, Inc. v.*
5 *Hosp. Core Servs. LLC*, No. 14-CV-08256, 2016 WL 344461 at *5–*8 (C.D. Cal.
6 Jan. 27, 2016) (Pregerson, J.) (“Here, the claim term ‘processor’ is a structural term that
7 cannot be reasonably disputed”); *Odyssey Wireless, Inc. v. Apple, Inc.*, No. 15-CV-
8 1735, 2016 WL 3055900, at *12 (S.D. Cal. Mar. 30, 2016) (Huff, J.) (citing cases);
9 *Quanergy Sys., Inc. v. Velodyne Lidar, Inc.*, No. 15-CV-05251, 2017 WL 4410174, at
10 *16–*19 (N.D. Cal. Oct. 4, 2017) (Davila, J.); *Align Tech., Inc. v. 3Shape Inc.*, No. 17-
11 1648, 2021 WL 2320139, at *6–*7 (D. Del. Jun. 7, 2021) (Stark, J.); *Fisher-Rosemount*
12 *Sys., Inc. et al. v. ABB Ltd. et al.*, No. 4:18-CV-000178, 2019 WL 6830806, at *16 (S.D.
13 Tex. Dec. 12, 2019); *Techno View IP, Inc. v. Facebook Techs., LLC*, No. 17-386, 2018
14 WL 6427874, at *4–*6 (D. Del. Dec. 7, 2018) (Burke, J.) (“[F]or the most part, courts
15 have ultimately concluded that ‘processor’ terms failed to invoke Section 112,
16 paragraph 6.”).

17 Finally, Defendants’ argument that the claims are “not patentable” and that “there
18 would be nothing inventive about the claims” (*see* Defs. CC Opening at 9) appears to
19 refer to the standards of patentability under 35 U.S.C. § 101 and is not relevant to
20 whether the “processor” terms are governed by 35 U.S.C. § 112, ¶ 6.

The Court therefore hereby expressly rejects Defendants’ argument that this is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. Defendants present no alternative proposed construction. The Special Master therefore hereby construes these disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“a processor configured to: . . .”	Plain meaning
“wherein one or more of the processor, the transceiver, or the smart antenna is further configured to: . . .”	Plain meaning (As discussed above, the claims require only that “one or more” “is further configured,” <i>not</i> necessarily that each and every one of “the processor,” “the transceiver,” and “the smart antenna” is so configured)

2. “an 802.11 standard”

“802.11 standard” (’376 Patent, Claims 10, 21)	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary	Indefinite

(Dkt. 255-1 at 13.)

(a) The Parties’ Positions

Plaintiff urges that “a POSITA would readily recognize ‘802.11’ to be a familiar reference to a family of standards promulgated by the Institute of Electrical and

1 Electronics Engineers,” and “[t]he claim context also confirms the meaning of the term.”
2 (Pl. CC Opening at 19 (citation omitted).) Plaintiff argues that “a POSITA would
3 readily understand that the claim term ‘802.11 standard’ refers to the genus of such
4 standards, and the relevant claims each require operation in accordance with at least one
5 species of that genus.” (*Id.*)

6 Defendants argue that “the ’376 and ’939 Patents do not explain what it means to
7 ‘operate in accordance with’ ‘an’ 802.11 standard,” and “[w]hile both patents use the
8 term ‘operate in accordance with,’ they never explain what is necessary to meet that
9 phrase.” (Defs. CC Opening at 29.) Defendants also submit that “the specifications do
10 not refer to a particular IEEE 802.11 standard as of a particular time” (*Id.*)

11 Plaintiff responds by reiterating its opening arguments, and Plaintiff also submits
12 that “‘802.11’ refers to a specific family of wireless networking standards, not to the
13 entire universe of wireless networking.” (Pl. CC Response at 20.)

14 Defendants respond that “a POSITA’s awareness of the IEEE’s standard setting
15 process and the existing family of 802.11 standards[] does not render clear the intent
16 behind the applicant’s use of ‘802.11 Standard’ in the claim[,] and XR’s ‘a POSITA is
17 aware of 802.11’ argument falls apart because both experts recognize the ambiguity of
18 that term.” (Defs. CC Response at 22.) Defendants also argue that “[t]he term ‘operate
19 in accordance with’ tells a POSITA nothing about which features are to be implemented
20 and how any inconsistencies are to be resolved.” (*Id.* at 23.)

1 At the January 18, 2022 hearing, the parties presented oral arguments regarding
2 this term.

3 (b) Analysis

4 The Supreme Court of the United States directs that “a patent is invalid for
5 indefiniteness if its claims, read in light of the specification delineating the patent, and
6 the prosecution history, fail to inform, with reasonable certainty, those skilled in the art
7 about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S.
8 898, 901 (2014).

9 Here, Claims 10 and 21 of the ’376 Patent recite:

10 10. The data-communications networking apparatus as recited in claim 1,
11 wherein the processor, transceiver and smart antenna are part of an access
12 point configured to support the first and second client devices in accordance
with an *802.11 standard*, and wherein a position of the access point is fixed.

13 * * *

14 21. The data-communications networking apparatus as recited in claim 20,
configured to support the first and second client devices in accordance with
an *IEEE 802.11 standard*.

15 Although Defendants present evidence that the term “802.11 standard” would be
16 understood by a person of skill in the art as potentially referring to various particular
17 standards, *Nautilus* provides additional discussion of the competing considerations
18 regarding definiteness:

19 To determine the proper office of the definiteness command, therefore, we
20 must reconcile concerns that tug in opposite directions. Cognizant of the
competing concerns, we read § 112, ¶ 2 to require that a patent’s claims,

1 viewed in light of the specification and prosecution history, inform those
2 skilled in the art about the scope of the invention with reasonable certainty.
3 The definiteness requirement, so understood, mandates clarity, while
4 recognizing that absolute precision is unattainable. The standard we adopt
5 accords with opinions of this Court stating that “the certainty which the law
6 requires in patents is not greater than is reasonable, having regard to their
7 subject-matter.” *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270, 37
S.Ct. 82, 61 L.Ed. 286 (1916). *See also United Carbon Co. v. Binney &*
Smith Co., 317 U.S. [228,] 236, 63 S. Ct. 165 [(1942)] (“claims must be
reasonably clear-cut”); *Markman [v. Westview Instruments, Inc.]*, 517 U.S.
[370,] 389, 116 S. Ct. 1384 [(1996)] (claim construction calls for “the
necessarily sophisticated analysis of the whole document,” and may turn on
evaluations of expert testimony).

8 572 U.S. at 910–11.

9 Here, Plaintiff persuasively argues that a person of ordinary skill in the art would
10 understand the scope of the term “802.11 standard” with reasonable certainty, and the
11 opinions of Plaintiff’s expert, Dr. Vojcic, are further persuasive in this regard. (*See* Pl.
12 CC Opening, Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶ 102.) The opinion of Defendants’
13 expert that “[t]here are sometimes incompatibilities among different versions of the
14 standard,” and the presence of mandatory features and optional features, does not compel
15 otherwise. (Defs. CC Response, Ex. 11, Nov. 9, 2021 Acampora dep. at 29:14–25.)
16 Similarly unavailing is Defendants’ reliance on testimony of Plaintiff’s expert that there
17 are differences between different versions of 802.11, which is a point not in dispute.
18 (*See* Defs. CC Opening, Ex. 5, Vojcic dep. at 20:20–21:3.) Although the term “802.11”
19 refers to a broad category of standards, “breadth is not indefiniteness.” *BASF*, 875 F.3d
20 at 1367 (citation and internal quotation marks omitted). Indeed, even Defendants’ own

1 expert testified at length regarding the 802.11 standards during his deposition. (*See* Pl.
2 CC Opening, Ex. 6, Nov. 9, 2021 Acampora dep. at 27:15–35:23.)

3 Defendants also argue that the phrase “in accordance with” is unclear, questioning
4 for example: “Does ‘operating in accordance with’ mean ‘full compliance’ with the
5 standard, or compliance with the mandatory provisions of the standard, or something
6 else?” (Defs. CC Opening at 29.) Defendants’ argument is akin to an argument that “in
7 accordance with” is a term of degree that lacks sufficient objective boundaries. (*See*
8 Defs. CC Opening at 28–29 (citing *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364,
9 1371 (Fed. Cir. 2014).)

10 Defendants did not disclose “in accordance with” as a disputed term. (*See* Pl. CC
11 Resp., Ex. 24, Defs. Am. Proposed Terms for Construction.) At the January 18, 2022
12 hearing, Defendants did not appear to rely on the specific phrase “in accordance with” as
13 giving rise to indefiniteness (*see* Jan. 18, 2022 Hr’g Tr. at 159:5–160:19), but to
14 whatever extent Defendants’ indefiniteness argument is indeed based on the phrase “in
15 accordance with,” any such argument is untimely.

16 Alternatively, even if Defendants’ apparent argument in this regard were
17 considered on the merits, the opinions of Plaintiff’s expert are persuasive that a person of
18 ordinary skill in the art would have a reasonably clear understanding of “in accordance
19 with” in the context of the 802.11 standards, particularly in light of the accompanying
20 recital of apparatuses that “*support* the first and second client devices” for

1 communication in a data network.

2 At the January 18, 2022 hearing, Defendants further argued that the literal scope
3 of the claim term “802.11 standard” should be limited to the meaning in the art at the
4 time of the invention. (*See also* Defs. CC Opening at 29.) Plaintiff responded that a
5 person of ordinary skill in the art at the time of the invention would have understood that
6 the 802.11 standards are subject to ongoing amendments, and Plaintiff reiterated that a
7 person of ordinary skill in the art would always know exactly where to look to find those
8 amendments.

9 “A claim cannot have different meanings at different times; its meaning must be
10 interpreted as of its effective filing date.” *PC Connector Solutions LLC v. SmartDisk*
11 *Corp.*, 406 F.3d 1359, 1363 (Fed. Cir. 2005) (citing *Markman*, 52 F.3d at 986 (en banc)
12 (“[T]he focus is on the objective test of what one of ordinary skill in the art *at the time of*
13 *the invention* would have understood the term to mean.”) (emphasis added), *aff’d*, 517
14 U.S. 370 (1996)); *see also Phillips*, 415 F.3d at 1313 (“the ordinary and customary
15 meaning of a claim term is the meaning that the term would have to a person of ordinary
16 skill in the art in question at the time of the invention, i.e., as of the effective filing date
17 of the patent application”).

18 These legal principles support Defendant’s position that the literal scope of the
19 term “802.11 standard” is limited to such standards that existed at the time of the
20 invention.

The Special Master therefore hereby expressly rejects Defendants’ indefiniteness argument and hereby construes this disputed term as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“an 802.11 standard”	“one of the IEEE 802.11 standards that existed at the time of the invention”

VI. THE DISPUTED TERMS IN U.S. PATENT NO. 8,289,939

3. “wireless input/output (I/O) unit”

“wireless input/output (I/O) unit” ('939 Patent, Claims 1–3, 15, 18–19, 30–32)	
Plaintiff’s Proposed Construction	Defendants’ Proposal
No construction necessary; not governed by 35 U.S.C. § 112(6). Alternative proposed construction, should the term be treated as means-plus-function: Function: Claims 1, 15, and 30: “establish a plurality of access points” Claims 2, 18, and 31: “establish a plurality of co-located access points” Claims 3, 19, and 32: “operate in accordance with at least one IEEE 802.11 standard” Structure: “Wireless input/output unit 206 and/or 5:30–64 and equivalents thereof”	Governed by 35 U.S.C. § 112, ¶6, and indefinite Function: Claims 1, 15, and 30: “establish a plurality of access points” Claims 2, 18, and 31: “establish a plurality of co-located access points” Claims 3, 19, and 32: “operate in accordance with at least one IEEE 802.11 standard” Structure: None disclosed

(Dkt. 255-1 at 14.)

(a) The Parties' Positions

Plaintiff argues that Defendants cannot overcome the presumption against means-plus-function treatment for this non-means term. (Pl. CC Opening at 20–21.)

Alternatively, Plaintiff argues that “[a] POSITA would readily understand that wireless input/output (I/O) unit 206 is a structure clearly linked to the function of establishing access points.” (*Id.* at 23 (citations omitted).)

Defendants argue that “a term may be known to have structure in some contexts, but may be a nonce word in other contexts, as dictated by the function to be performed.”

(Defs. CC Opening at 17 (citation omitted).) Defendants argue that “‘wireless input/output (I/O) unit’ is treated as a black box that merely describes a ‘general category of whatever may perform’ the function.” (*Id.* at 18 (citation omitted).)

Defendants likewise argue that “unit” is a “nonce” term that lacks structural meaning, and “the prefix in the claim language, ‘wireless input/output (I/O)’ does not inform a POSA what structure performs the recited function, ‘establish a plurality of access points.’” (*Id.* (citations omitted).) As for corresponding structure, Defendants argue that “the specification does not disclose the function ‘establish a plurality of access points,’” and “while the specification refers to a ‘wireless input/output (I/O) unit 206’ in the Figure 2, 4, and 6 embodiments, these embodiments do not disclose any structure for performing the function ‘establish a plurality of access points.’” (*Id.* at 20.)

1 Plaintiff responds that “wireless input/output (I/O) unit” is not a coined term and
2 would connote structure to a person of ordinary skill in the art. (Pl. CC Response at 15.)
3 Plaintiff also argues that “because the wireless I/O unit is within a physical structure and
4 itself contains physical structures, a POSA would understand that this term refers to a
5 physical object generally known in the art, and thus cannot be a means-plus-function
6 term.” (*Id.* at 16.)

7 Defendants respond that this term “is a ‘nonce’ term that does not convey any
8 structure to one of skill in the art,” and Defendants argue that “the specification cannot
9 remedy the absence of structure in the claim itself.” (Defs. CC Response at 14.)
10 Moreover, Defendants argue, “XR does not dispute that the specification does nothing
11 more than repeat the function.” (*Id.* at 15; *see id.* at 16.)

12 At the January 18, 2022 hearing, the parties presented oral arguments regarding
13 this term.

14 (b) Analysis

15 Claim 1 of the ’939 Patent, for example, recites (emphasis added):

- 16 1. An apparatus comprising:
17 a *wireless input/output (I/O) unit* that is configured to establish a
18 plurality of access points; and
19 signal transmission/reception coordination logic that is capable of
20 ascertaining, by monitoring the plurality of access points for received
signals, that a first access point of the plurality of access points is receiving
a first signal and that is adapted to restrain at least two other access points
of the plurality of access points from transmitting signal responsive to the
ascertaining that the first access point is receiving the first signal;
wherein the signal transmission/reception coordination logic restrains

1 at least one other access point of the plurality of access points from
2 transmitting the other signal on a first channel responsive to the ascertaining
3 that the access point of the plurality of access points is receiving the signal
4 on a second different channel.

5 In some circumstances, the word “unit” might be deemed to be a so-called
6 “nonce” word that lacks structural meaning, but here the modifiers impart structural
7 meaning to the disputed term. *See Williamson*, 792 F.3d at 1351. Specifically, the
8 phrase “wireless input/output (I/O)” on its face connotes structure and is analogous to the
9 “wireless device means” term in *Skky* (cited below).

10 This reading is reinforced by disclosure in the specification. The Court can
11 consider the specification in determining whether a term is a means-plus-function term
12 governed by 35 U.S.C. § 112, ¶ 6:

13 [T]he first step in the means-plus-function analysis requires us to determine
14 whether the entire claim limitation at issue connotes “sufficiently definite
15 structure” to a person of ordinary skill in the art. In so doing, we naturally
16 look to the specification, prosecution history, and relevant external evidence
17 to construe the limitation. While this inquiry may be similar to looking for
18 corresponding structure in the specification, our precedent requires it when
19 deciding whether a claim limitation lacking means connotes sufficiently
20 definite structure to a person of ordinary skill in the art.

16 *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1296–97 (Fed. Cir. 2014), *abrogated*
17 *on other grounds by Williamson*, 792 F.3d 1339 (citations omitted); *Media Rights*, 800
18 F.3d at 1372 (quoted above); *see also ZeroClick*, 891 F.3d at 1007 (“Th[e] determination
19 [of whether a claim limitation invokes § 112, ¶ 6] must be made under the traditional
20 claim construction principles, on an element-by-element basis, and in light of evidence

1 intrinsic and extrinsic to the asserted patents.”).

2 The specification refers to a wireless I/O unit as including structures and as being
3 part of a structure. *See, e.g.*, ’939 Patent at 4:17–23 (“[a]ccess station 102 includes
4 wireless I/O unit 206”; “[w]ireless I/O unit 206 includes an antenna array 208 that is
5 implemented as two or more antennas, and optionally as a phased array of antennas”),
6 5:30–37 (similar) & 6:60–64 (“Such a wireless I/O unit 206 may also optionally include
7 one or more of Ethernet switch/router 602, beamformer 612, and antenna array 208.”).

8 This disclosure reinforces the finding, above, that “wireless input/output (I/O) unit”
9 connotes structure based on the modifiers “wireless input/output (I/O).” The further
10 claim language reciting that the “wireless input/output (I/O) unit” “is configured to
11 establish a plurality of access ports” relates to configuration of the structure and does not
12 compel means-plus-function treatment for this non-means term.

13 The term “wireless input/output (I/O) unit” thus connotes structure. The Federal
14 Circuit’s analysis of the analogous term “wireless device means” in *Skky* supports this
15 finding, as “it is sufficient if the claim term is used in common parlance or by persons of
16 skill in the pertinent art to designate structure, even if the term covers a broad class of
17 structures and even if the term identifies the structures by their function.” *Skky*, 859 F.3d
18 at 1019 (quoting *TecSec*, 731 F.3d 1347). Although Defendants note that the Federal
19 Circuit decided the cited *TecSec* case prior to *Williamson*, the Federal Circuit decided
20 *Skky* after *Williamson*, and *Skky* discusses *TecSec* together with discussing *Williamson*.

1 *See Skky*, 859 F.3d at 1020.

2 Also of note, *Skky* dealt with a “means” term that was *presumed* to be a means-
3 plus-function term under 35 U.S.C. § 112, ¶ 6, and the Federal Circuit found that the
4 phrase “wireless device” carried sufficiently strong structural connotations to *overcome*
5 the presumption. *Id.* (“Although the term uses the word ‘means’ and so triggers a
6 presumption, the full term recites structure, not functionality.”).

7 In the present case, the term here at issue does not use the word “means” and is
8 therefore presumed *not* to be a means-plus-function term subject to 35 U.S.C. § 112, ¶ 6.
9 The Federal Circuit’s analysis in *Skky* thus applies with even greater force in the present
10 case, particularly in light of the above-cited disclosure in the specification. *See, e.g.*,
11 ’939 Patent at 4:17–23. The opinions of Plaintiff’s expert are further persuasive in this
12 regard. (*See* Pl. CC Opening, Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶¶ 107–117.) The
13 contrary opinions of Defendants’ expert are unpersuasive. (*See* Defs. CC Opening,
14 Ex. 3, Nov. 2, 2021 Acampora Decl. at ¶ 61–66.) Further, as to Defendants’ argument at
15 the January 18, 2022 hearing that the specification does not describe how to perform the
16 function of establishing a plurality of access points, Defendants’ argument perhaps might
17 bear on issues of enablement or written description but does not present any issue for
18 claim construction.

19 Finally, Defendants cite the *Ruckus* decision by Judge William H. Orrick of the
20 Northern District of California. *See XR Commc’ns, LLC v. Ruckus Wireless, Inc.*, No.

18-CV-01992-WHO, 2021 WL 3918136 (N.D. Cal. Sep. 1, 2021). But Judge Orrick’s analysis in that case pertained to a “logic” term that is not analogous to the “wireless input/output (I/O) unit” term here at issue. *See id.* (“search receiver logic”). The Federal Circuit’s analysis in the *Diebold* case regarding the term “cheque standby unit,” also cited by Defendants, is likewise unpersuasive as to the “wireless input/output (I/O) unit” term here at issue. *See Diebold Nixdorf, Inc. v. ITC*, 899 F.3d 1291 (Fed. Cir. 2018).

The Special Master therefore hereby expressly rejects Defendants’ argument that this is a means-plus-function term, and the Special Master hereby expressly rejects Defendants’ argument that this term is indefinite. Defendants submit no alternative proposed construction, so the Special Master hereby construes this disputed term as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“wireless input/output (I/O) unit”	Plain meaning

4. “signal transmission/reception coordination logic”

“signal transmission/reception coordination logic” (’939 Patent, Claims 1, 7–8, 11–17, 30)	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary; not governed by 35 U.S.C. § 112(6).	Governed by 35 U.S.C. § 112, ¶6, and indefinite
Alternative proposed construction, should the term be treated as means-	Functions:

1	plus-function:	Claim 1:
2	Function:	“ascertaining, by monitoring the
3	Claim 1: ascertaining, by monitoring	plurality of access points for received
4	the plurality of access points for	signals, that a first access point of the
5	received signals, that a first access	plurality of access points is receiving a
6	point of the plurality of access points is	first signal” and “restrain[ing] at least
7	receiving a first signal” and	two other access points of the plurality
8	“restrain[ing] at least two other access	of access points from transmitting signal
9	points of the plurality of access points	responsive to the ascertaining that the
10	from transmitting signal responsive to	first access point is receiving the first
11	the ascertaining that the first access	signal”
12	point is receiving the first signal	Claim 1:
13	Claim 1: restrain[ing] at least one other	“restrain[ing] at least one other
14	access point of the plurality of access	access point of the plurality of access
15	points from transmitting the other	points from transmitting the other signal
16	signal on a first channel responsive to	on a first channel responsive to the
17	the ascertaining that the access point of	ascertaining that the access point of the
18	the plurality of access points is	plurality of access points is receiving
19	receiving the signal on a second	the signal on a second different
20	different channel	channel”
	Claim 7: restrain[ing] at least one other	Claim 7:
	access point of the plurality of access	“restrain[ing] at least one other
	points while the first access point is	access point of the plurality of access
	receiving the first signal	points while the first access point is
	Claim 13: affect[ing] a baseband unit	receiving the first signal”
	Claim 14: affect[ing] a radio frequency	Claim 13:
	(RF) part	“affect[ing] a baseband unit”
	Claim 15: ascertaining, by monitoring	Claim 14:
	the plurality of access points for	“affect[ing] a radio frequency (RF)
	received signals, that: a first access	part”
	point of the plurality of access points is	Claim 15:
	receiving a first signal on a first	“ascertaining, by monitoring the
	channel, a second access point of the	plurality of access points for received
		signals, that:” (i) “a first access point of
		the plurality of access points is

plurality of access points is receiving a second signal that is ongoing on a second channel, restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals

Claim 30: ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel, restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal.

Structure:

Signal transmission/reception coordination logic 404 and/or MAC coordinator logic 606 and/or 6:16–38 and/or 6:65–7:20 and/or 9:11–59 and/or 11:54–12:21 and/or 17:1–32, and equivalents thereof

receiving a first signal on a first channel,” (ii) “a second access point of the plurality of access points is receiving a second signal that is ongoing on a second channel,” (iii) “restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals”

Claim 30:

“ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel”

“restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal”

Structure:

None (indefinite)

(Dkt. 255-1 at 14–17; *see* Def. CC Opening at 22–26.)

1 (a) The Parties' Positions

2 Plaintiff argues that Defendants cannot overcome the presumption against means-
3 plus-function treatment for this non-means term. (Pl. CC Opening at 23.) Plaintiff
4 submits that “a POSITA recognizes that this claim term refers to a specific class of logic
5 (or electronic circuit) contained on a processor within a Wi-Fi router or Wi-Fi switch
6 that coordinates signal transmissions and receptions for access points.” (*Id.* (citation
7 omitted).) Plaintiff also argues that “while the specification allows for the signal
8 transmission/reception coordination logic to be implemented as hardware, software,
9 firmware, or a combination thereof, a POSITA understands that this term recites
10 sufficiently definite structure, because it is contained in the physical structure of the
11 baseband processing layer of the processor chip in a Wi-Fi router or switch.” (*Id.* at 24.)
12 Further, Plaintiff argues that “the contextual claim language makes clear that ‘signal
13 transmission/reception coordination logic’ describes a class of structures, because it is
14 ‘coupled to’ other elements that are physical structures, like ‘access station,’ ‘wireless
15 input/output (I/O) unit,’ baseband processors, and antenna arrays, which, as discussed
16 above, are not disputed as physical structures.” (*Id.* at 25 (citations omitted).)
17 Alternatively, Plaintiff argues that “the Court should construe this term to have the
18 structure of signal transmission/reception coordination logic 404 and/or MAC
19 coordinator logic 606 as corresponding structure clearly linked to performing the
20 claimed functions,” and “the Court may also construe ‘signal transmission/reception

1 coordination logic’ to cover a corresponding ‘algorithm’ in the specification.” (*Id.* at 26
2 & 27 (citation omitted).)

3 Defendants argue that “‘logic’ is a well-known nonce word that does not connote
4 sufficiently definite structure and can operate as a substitute for ‘means.’” (Defs. CC
5 Opening at 22 (citation omitted).) Defendants also argue that the phrase “signal
6 transmission/reception coordination” does not “impart any structure, as it merely
7 describes the function of the ‘logic.’” (*Id.* at 23.) As to the claimed function,
8 Defendants argue that “[t]h[e] requirement of restraining transmission on one channel, in
9 response to ascertaining reception on a different channel, was the basis for the examiner
10 determining the claims were allowable.” (Defs. CC Opening at 25 (citing Ex. 8, July 16,
11 2012 Notice of Allowance at 2–5 (pp. 205–08 of Ex. 8)).) As to corresponding structure,
12 Defendants argue that “[a]t best, [the specification] restates the claimed functionality,
13 without any explanation of how it might be implemented, or what steps it might entail.”
14 (*Id.*)

15 Plaintiff responds that “as made clear in the intrinsic evidence of the ’939 Patent
16 claims and specification, the signal transmission/reception coordination logic refers to a
17 specific class of logic (or electronic circuit) contained in the baseband processing layer
18 of the processing chip in a wireless routing device.” (Pl. CC Response at 18 (citing ’939
19 Patent at 18:39–44).) Plaintiff thus urges that “a POSA understands that this term recites
20 sufficiently definite structure, because it is contained in the *physical structure* of the

1 baseband processing layer of the processor chip in a Wi-Fi router or switch.” (Pl. CC
2 Opening at 18.)

3 Defendant responds that: “The ’939 patent claims do not specify what the ‘signal
4 transmission/reception coordination logic’ *is*. Rather, they merely indicate what it
5 *does*.” (Defs. CC Response at 17.) Defendants also emphasize authority for the
6 proposition that “[m]ere inclusion of a limitation within a structure does not
7 automatically render the limitation itself sufficiently structural.” (*Id.* (quoting *Egenera*,
8 972 F.3d at 1374).) As to corresponding structure, Defendants argue that “none of the[]
9 passages or figures [cited by Plaintiff] relate to logic for restraining transmission on a
10 different channel than the channel on which a signal is received, other than the cursory
11 paragraph of 6:39–53.” (Defs. CC Response at 20.)

12 At the January 18, 2022 hearing, the parties presented oral arguments regarding
13 this term. For example, Plaintiff argued that no authority limits the corresponding
14 structure analysis to only the disclosures that expressly refer to the recited function.
15 Rather, Plaintiff urged, the analysis can consider additional description of the linked
16 structure.

17 (b) Analysis

18 Legal principles regarding 35 U.S.C. § 112, ¶ 6 are set forth above as to the
19 “processor” terms in the ’376 Patent.

20 Here, Claim 1 of the ’939 Patent for example recites (emphasis added):

1 1. An apparatus comprising:
2 a wireless input/output (I/O) unit that is configured to establish a
3 plurality of access points; and
4 *signal transmission/reception coordination logic* that is capable of
5 ascertaining, by monitoring the plurality of access points for received
6 signals, that a first access point of the plurality of access points is receiving
7 a first signal and that is adapted to restrain at least two other access points
8 of the plurality of access points from transmitting signal responsive to the
9 ascertaining that the first access point is receiving the first signal;
10 wherein the *signal transmission/reception coordination logic*
11 restrains at least one other access point of the plurality of access points from
12 transmitting the other signal on a first channel responsive to the ascertaining
13 that the access point of the plurality of access points is receiving the signal
14 on a second different channel.

15 In *Ruckus*, Judge Orrick found the similar term “search receiver logic” in
16 Plaintiff’s United States Patent No. 6,611,231 (“the ’231 Patent”) was a means-plus-
17 function term. *See XR Commc’ns, LLC v. Ruckus Wireless, Inc.*, No. 18-CV-01992-
18 WHO, 2021 WL 3918136 (N.D. Cal. Sept. 1, 2021).

19 Substantially the same analysis applies here as to the “signal
20 transmission/reception coordination logic.” The prefix “signal transmission/reception
coordination” describes functions and does not connote structure. *Cf. Rain Computing, Inc. v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1006 (Fed. Cir. 2021) (“Nor does the prefix ‘user identification’ impart structure because it merely describes the function of the module: to identify a user.”).

Also, the recitals of inputs, outputs, connections, and operations (such as “monitoring,” “ascertaining,” and “restrain[ing]”) are insufficient to connote or imply any particular structure for the “signal transmission/reception coordination logic.” Also,

1 it is unpersuasive that the claims or the specification may disclose a signal
2 transmission/reception logic as part of a structure because “[m]ere inclusion of a
3 limitation within a structure does not automatically render the limitation itself
4 sufficiently structural.” *Egenera*, 972 F.3d at 1374; *see, e.g.*, ’939 Patent at 5:30–33
5 (“signal transmission/reception logic 404” can be included within “wireless I/O unit
6 206”).

7 The opinions of Plaintiff’s expert are likewise unpersuasive. (*See* Pl. CC
8 Opening, Ex. 4, Nov. 2, 2021 Wojcik Decl. at ¶¶ 121 & 124–34.) The dictionary
9 definitions of “logic,” such as meaning “functions” or “circuits,” do not compel
10 otherwise. (*See* Pl. CC Opening, Exs. 8 & 17–18.) Plaintiff also cites *VR Optics*, which
11 found that “placement of ‘logic’ alongside and in the same format as . . . other clearly
12 structural terms highlights that the . . . patent is using the term logic to connote a known
13 structure rather than as a nonce substitute for the word ‘means.’” *See VR Optics, LLC v.*
14 *Peloton Interactive, Inc.*, 345 F. Supp. 3d 394, 410 (S.D.N.Y. 2018). On balance, to
15 whatever extent *VR Optics* is analogous, it is not binding on this Court and is
16 unpersuasive, as Judge Orrick also found in *Ruckus*. *See* 2021 WL 3918136, at *8 n.4
17 (N.D. Cal. Sept. 1, 2021).

18 Plaintiff further points out that Judge Orrick cited a definition of “logic” set forth
19 in the ’231 Patent itself, which defined “logic” as “hardware, firmware, software, or any
20 combination thereof that may be implemented to perform logical operations associated

1 with a given task.” *Id.*, at *7. But although the ’939 Patent contains no such definition,
2 Judge Orrick did not rely exclusively on this definition of “logic.” Rather, Judge Orrick
3 cited this definition of “logic” “[i]n addition” to being persuaded by expert opinion that
4 the term “search receiver logic” did not connote any sufficiently definite structure for
5 performing the claimed function. *See id.*, at *6–*7. Also, the ’939 Patent discloses, as
6 to the “signal transmission/reception coordination logic 404,” that “[s]uch logic may be
7 implemented as hardware, software, firmware, some combination thereof, and so forth.”
8 ’939 Patent at 5:35–37.

9 The Special Master thus finds that “signal transmission/reception coordination
10 logic” is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. The parties
11 agree upon the claimed functions. (*See* Dkt. 255, Ex. A at 14–17.) The parties dispute
12 whether the specification discloses sufficient corresponding structure.

13 Plaintiff proposes that the corresponding structure is:

14 Signal transmission/reception coordination logic 404 and/or MAC
15 coordinator logic 606 and/or 6:16–38 and/or 6:65–7:20 and/or 9:11–59
and/or 11:54–12:21 and/or 17:1–32, and equivalents thereof.

16 (*Id.* at 17.)

17 The specification discloses, for example:

18 At block 502, multiple access points are monitored. For example, access
19 points 402(1 . . . N) may be monitored by *signal transmission/reception*
20 *coordination logic 404* (e.g., to detect signal reception). At block 504, it is
ascertained that an access point of the multiple monitored access points is
receiving a signal. For example, it may be ascertained by signal
transmission/reception coordination logic 404 that an access point 402(1) of

1 multiple access points 402(1 . . . N) is receiving a signal via a wireless I/O
2 unit 206.

3 At block 506, the other access points of the multiple monitored access
4 points are restrained from transmitting a signal. For example, signal
5 transmission/reception coordination logic 404 may restrain access points
6 402(2 . . . N) from transmitting a signal. In a described implementation,
7 signal transmission/reception coordination logic 404 may restrain access
8 points 402(2 . . . N) from transmitting signals until access point 402(1)
9 ceases receiving the signal.

10 With reference again to FIG. 4, one access point 402 (and/or
11 communication beam 202) may operate on a different channel from that of
12 another access point 402 (and/or communication beam 202). If the different
13 channels are adjacent and/or not sufficiently-well defined, it may be
14 beneficial to restrain transmission on a first channel with a first access point
15 402 even when receiving a wireless communication on a second different
16 channel with a second access point 402. In another exemplary
17 implementation for different channel situations, signal
18 transmission/reception coordination logic 404 may restrain transmission on
19 one channel on the basis of reception on another channel with an ongoing
20 transmission on a third channel to prevent (e.g., inter-modulation) distortion
to the signals being communicated in the wireless system.

FIG. 6 illustrates an exemplary access station 102 that includes multiple
components such as medium access controllers (MACs) 604, baseband
(BB) units 608, and *MAC coordinator logic* 606. As illustrated, access
station 102 also includes an Ethernet switch and/or router 602, radio
frequency (RF) parts 610, a beamformer 612, and antenna array 208. A
wireless I/O unit 206 (e.g., as illustrated in FIGS. 2 and 4) may correspond
to MACs 604, MAC coordinator logic 606, BB units 608, and RF parts 610.
Such a wireless I/O unit 206 may also optionally include one or more of
Ethernet switch/router 602, beamformer 612, and antenna array 208.

In a described implementation, antenna array 208 is coupled to beamformer
612. Beamformer 612 is coupled to multiple RF parts 610(1), 610(2) . . .
610(N). Respective multiple RF parts 610(1), 610(2) . . . 610(N) are
coupled to respective is [*sic*] multiple BB units 608(1), 608(2) . . . 608(N).
On the other hand, Ethernet switch/router 602 is coupled to multiple MACs
604(1), 604(2) . . . 604(N). Both of the multiple BB units 608(1, 2 . . . N)

1 and the multiple MACs 604(1, 2 . . . N) are coupled to MAC coordinator
2 logic 606.

3 In operation generally, each respective MAC 604(1, 2 . . . N) is associated
4 with a respective BB unit 608(1, 2 . . . N). Although not specifically shown
5 in FIG. 6, each respective MAC 604 may also be in direct communication
6 with each of the respective associated BB units 608. MAC coordinator
7 logic 606 is configured to coordinate the activities of the multiple MACs
8 604 (e.g., as a multi-MAC controller (MMC)) with regard to at least one
9 non-associated respective BB unit 608. For example, MAC coordinator
10 logic 606 may forward an instruction to MAC 604(1) responsive, at least
11 partly, to an indicator provided from BB unit 608(2). MAC coordinator
12 logic 606 may be implemented as hardware, software, firmware, some
13 combination thereof, and so forth.

14 * * *

15 As noted above, *MAC coordinator logic 606* (and signal
16 transmission/reception coordination logic 404 (of FIG. 4)) may be modified,
17 tweaked, expanded, etc. based on any one or more of many factors. FIG. 8
18 illustrates some of these factors. For example, FIG. 8 includes channel
19 assignment information 802, receive indicator enable information 804,
20 timer logic 816, and scanning logic 812. Channel assignment information
802, receive indicator enable information 804, timer logic 816, and/or
scanning logic 812 may be part of MAC coordinator logic 606 or another
part of access station 102A.

Channel assignment information 802 enables receive indicators (1, 2 . . . 13)
to be combined by receive indicators combiner 810 on a per-channel basis.
As a result, constructive receive indicators (1, 2 . . . 13) restrain signal
transmissions from MAC 604/BB unit 608 pairs when a signal reception is
occurring on the same channel, even if by a different MAC 604/BB unit 608
pair. A downlinked packet that is transmitted on one channel while an
uplinked packet is being received on another channel does not usually cause
the uplinked packet to be thrashed (as long as the two channels are
sufficiently well-defined or otherwise separated). On the other hand, a
downlinked packet that is transmitted on a channel while an uplinked packet
is being received on the same channel does usually cause the uplinked
packet to be thrashed, even if the transmission and reception occur using
different communication beams 202 (of FIGS. 2 and 3).

1 Channel assignment information 802 may be implemented as, for example,
2 a vector that relates each MAC 604 and associated BB unit 608 to one of
3 two or more channels. Hence, prior to combination using receive indicators
4 combiner 810, each respective receive indicator of receive indicators (1, 2
5 . . . 13) can be mapped to a channel segmentation or grouping based on a
6 wireless communication channel used by a corresponding MAC 604/BB
7 unit 608 pair.

8 '939 Patent at 6:22–7:20 & 11:54–12:21; *see also id.* at 5:57–6:5, 8:11–59, 9:11–10:60,
9 15:66–16:11 & 16:59–32; *id.* at 18:12–19 (“MAC coordinator logic 606 of FIG. 12 is an
10 example of a distributed signal transmission/reception coordination logic 404 at a MAC
11 level that optionally uses MAC primitives.”) & 18:39–44 (“signal transmission/reception
12 coordination logic 404 may be implemented at the baseband layer in a system that
13 utilizes off-the-shelf chips in which MAC and baseband functionality are integrated into
14 a single chip or chips that may not separately expose desired MAC signal(s) (e.g., MAC
15 primitives)”).

16 These disclosures link the disclosed signal transmission/reception coordination
17 logic 404 to the claimed functions here at issue. Despite Defendants’ arguments to the
18 contrary, this does not amount to “[s]imply disclosing a black box that performs the
19 recited function.” *Augme Techs., Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1338 (Fed. Cir.
20 2014) (“Simply disclosing a black box that performs the recited function is not a
sufficient explanation of the algorithm required to render the means-plus-function term
definite.”) (citation omitted). The opinions of Defendants’ expert are likewise
unpersuasive. (Defs. CC Opening, Ex. 3, Nov. 2, 2021 Acampora Decl. at ¶¶ 97–112.)

1 As to Claim 1, the specification links the signal transmission/reception
2 coordination logic 404 to the claimed functions of “ascertaining, by monitoring the
3 plurality of access points for received signals, that a first access point of the plurality of
4 access points is receiving a first signal,” “restrain[ing] at least two other access points of
5 the plurality of access points from transmitting signal responsive to the ascertaining that
6 the first access point is receiving the first signal,” and “restrain[ing] at least one other
7 access point of the plurality of access points from transmitting the other signal on a first
8 channel responsive to the ascertaining that the access point of the plurality of access
9 points is receiving the signal on a second different channel.” *See* ’939 Patent at 6:22–38.

10 This also applies to Claim 7, which recites “restrain[ing] at least one other access
11 point of the plurality of access points from transmitting a downlink signal,” and
12 Claim 15, which recites ascertaining, by monitoring the plurality of access points for
13 received signals, that a first access point of the plurality of access points is receiving a
14 first signal on a first channel and that a second access point of the plurality of access
15 points is receiving a second signal that is ongoing on a second channel, and
16 “restrain[ing] at least a third access point of the plurality of access points from
17 transmitting a third signal on a third channel responsive to the ascertaining that the first
18 access point is receiving the first signal and that the second access point is receiving the
19 second signal that is ongoing-on the second channel,” and Claim 30, which recites
20 “restrain[ing] at least a second access point of the plurality of access points from

transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal.”

As to Claims 13 and 14, the specification links the signal transmission/reception coordination logic 404 to affecting baseband units (“BB units”) and affecting radio frequency (“RF”) parts. *See* ’939 Patent at 18:25–31 (“Signal transmission/reception coordination logic 404 accepts as inputs receive information from multiple RF parts 610(1, 2 ... N) and produces as outputs combined receive information for multiple respective BB units 608(1, 2 ... K). Respective BB units 608(1, 2 ... K) provide MAC primitives to respective MACs 604(1, 2 , , K) based on the combined receive information.”).

As to Plaintiff’s proposal that “MAC coordinator logic 606” is an alternative corresponding structure, Plaintiff does not persuasively show that this structure is “clearly link[ed]” to the above-noted claimed functions. *Triton*, 753 F.3d at 1378.

The Special Master therefore hereby construes this disputed term as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“signal transmission/reception coordination logic”	Means-plus-function term governed by 35 U.S.C. § 112, ¶ 6 Function: Claim 1: “ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal” and “restrain[ing] at least two other access

points of the plurality of access points from transmitting signal responsive to the ascertaining that the first access point is receiving the first signal”

Claim 1: “restrain[ing] at least one other access point of the plurality of access points from transmitting the other signal on a first channel responsive to the ascertaining that the access point of the plurality of access points is receiving the signal on a second different channel”

Claim 7: “restrain[ing] at least one other access point of the plurality of access points from transmitting a downlink signal”

Claim 13: “affect[ing] a baseband unit”

Claim 14: “affect[ing] a radio frequency (RF) part”

Claim 15: “ascertaining, by monitoring the plurality of access points for received signals, that:”
(i) “a first access point of the plurality of access points is receiving a first signal on a first channel,” (ii) “a second access point of the plurality of access points is receiving a second signal that is ongoing on a second channel,” (iii) “restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals”

Claim 30: “ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel” and “restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal”

Structure:

	“signal transmission/reception coordination logic 404 (with the characteristics and configuration set forth for the signal transmission/reception coordination logic 404 in the '939 Patent), and equivalents thereof”
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5. “responsive to . . .” Terms

“responsive to the ascertaining that the access point of the plurality of access points is receiving the signal on a second different channel” (’939 Patent, Claim 1)	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	“while the access point of the plurality of access points is ascertained to be receiving the signal on a second different channel”
“responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel” (’939 Patent, Claim 15)	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	“while the first access point is ascertained to be receiving the first signal and the second access point is ascertained to be receiving the second signal that is ongoing-on the second channel”

“responsive to the ascertaining that the first access point is receiving the first signal”

(’939 Patent, Claim 30)

Plaintiff’s Proposed Construction

Defendants’ Proposed Construction

No construction necessary.

“while the first access point is ascertained to be receiving the first signal”

(Dkt. 255-1 at 17–18.)

(a) The Parties’ Positions

Plaintiff argues that “Defendants’ proposed constructions are unnecessary exercises in inserting or rearranging claim terms and should be rejected.” (Pl. CC Opening at 27.) Also, as to Defendants’ proposal of “while,” Plaintiff argues that “Defendants identify no lexicography or disclaimer indicating that the separate steps of ascertaining and restraining must occur simultaneously.” (*Id.* at 28.) Plaintiff urges that “[i]f the drafter had intended the independent claims to include a ‘while’ limitation, the claims would have included such a limitation.” (*Id.*) Further, Plaintiff argues that “Defendants’ rewriting suggests that each phrase might have a new ascertainment separate from the already-claimed ascertaining, injecting potential uncertainty.” (*Id.*)

Defendants argue that “[t]his phrase, which appears in some form in each independent claim of the ’939 Patent, specifies when the claimed ‘restraining’ is to take place,” and “Defendants’ construction clarifies that the claimed restraining takes place in

1 real time.” (Defs. CC Opening at 26.) “That is,” Defendants argue, “one access point is
2 restrained from transmitting *while* another access point is ascertained to be receiving, in
3 order to mitigate interference” (*Id.*) As to the recital in dependent Claim 8 that the
4 logic “restrains . . . while the first access point is receiving the first signal,” Defendants
5 argue that “a close look at the prosecution history shows that any redundancy between
6 claims 1 and 8 was likely unintentional.” (*Id.* at 28.)

7 Plaintiff responds that “Defendants seek to introduce a new requirement that the
8 restraining must occur ‘*while* [the access point] is receiving [the signal],’ which is not in
9 the claim at all,” and “[t]he plain meaning of ‘responsive to’ invokes cause and effect—it
10 does not mean ‘while,’ ‘during’ or ‘simultaneous with.’” (Pl. CC Response at 21.)

11 Defendants respond: “Defendants’ proposed construction of the ‘responsive . . .’
12 terms clarifies that the claimed restraining takes place in real time. The construction is
13 supported by: the claim language which states that the ‘restraining’ is done ‘responsive
14 to the ascertaining that the [access point] *is receiving*’ a signal, the specification that
15 consistently describes the restraining taking place while the signal is being received, and
16 the patent’s objective of avoiding interference between downlink signal transmissions
17 and uplink signal receptions. Defs. Op. Br. at 26–28.” (Defs. CC Response at 23.)

18 At the January 18, 2022 hearing, the parties submitted this term on the briefing
19 without oral argument.
20

1 (b) Analysis

2 Claim 1 of the '939 Patent, for example, recites (emphasis added):

3 1. An apparatus comprising:

4 a wireless input/output (I/O) unit that is configured to establish a
plurality of access points; and

5 signal transmission/reception coordination logic that is capable of
ascertaining, by monitoring the plurality of access points for received
6 signals, that a first access point of the plurality of access points is receiving
a first signal and that is adapted to restrain at least two other access points
7 of the plurality of access points from transmitting signal *responsive to* the
ascertaining that the first access point is receiving the first signal;

8 wherein the signal transmission/reception coordination logic restrains
at least one other access point of the plurality of access points from
9 transmitting the other signal on a first channel *responsive to* the ascertaining
that the access point of the plurality of access points is receiving the signal
10 on a second different channel.

11 Plaintiff's expert submits that "it is the interference between *transmissions*, not
12 between access points, that requires the step of restraining at least one other access point
13 of the plurality of access points from transmitting." (*See* Pl. CC Opening, Ex. 4, Nov. 2,
14 2021 Vojcic Decl. at ¶ 140.) The specification discloses:

15 Generally, signal transmission/reception coordination logic 404 coordinates
uplink signal receptions and downlink signal transmissions across different
16 access points 402 so as to avoid or at least reduce the frequency at which
downlink signals are transmitted at a first access point 402(y) *while* uplink
17 signals are being received at a second access point 402(x).

18 * * *

19 [A]n incoming packet reception via a communication beam 202(x) can be
rendered unsuccessful by an outgoing packet transmission via a
20 communication beam 202(y) that occurs on the same channel (or adjacent
or otherwise sufficiently proximate channels with imprecise channel
boundaries) and is *temporally overlapping*.

1 '939 Patent at 5:58–64 & 9:4–10 (emphasis added); *see id.* at 6:35–46 (“If the different
2 channels are adjacent and/or not sufficiently-well defined, it may be beneficial to restrain
3 transmission on a first channel with a first access point 402 even when receiving a
4 wireless communication on a second different channel with a second access point 402.”);
5 *see also id.* at 11:39–42 & 12:4–13.

6 But although the specification uses the word “while,” Defendants do not
7 persuasively show that “responsive to” means “while.” That is, Defendants have not
8 demonstrated that one action being “responsive to” another action necessarily requires
9 the actions to be contemporaneous. To whatever extent the above-cited disclosures set
10 forth such operation, this is a specific feature of particular disclosed embodiments that
11 should not be imported into the claims. *See Phillips*, 415 F.3d at 1323. Indeed, the
12 claim language itself recites “*is* receiving,” and one of the above-reproduced disclosures
13 refers to transmissions that are “temporally *overlapping*,” which further weighs against
14 limiting “responsive to” to meaning “while.” ’939 Patent at 9:4–10. As to Defendants’
15 arguments that “responsive to” must mean “while” in order to be consistent with the
16 purpose of the claimed invention, “[t]he court’s task is not to limit claim language to
17 exclude particular devices because they do not serve a perceived ‘purpose’ of the
18 invention.” *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1370 (Fed. Cir. 2003).

19 Also, Defendants argue that “the claims use the present progressive tense (‘is
20 receiving’) to indicate that the reception of a signal is a presently occurring action” (Def.

1 CC Opening at 26), but Defendants do not show how this necessarily requires the
2 “restrain[ing]” to be contemporaneous with the “ascertaining.”

3 The doctrine of claim differentiation reinforces this conclusion. Dependent
4 Claim 8 recites (emphasis added):

5 8. The apparatus of claim 1, wherein the signal transmission/reception
6 coordination logic restrains at least one other access point of the plurality of
access points *while* the first access point is receiving the first signal.

7 Dependent Claim 8 thus includes the “while” limitation that Defendants propose
8 including in the independent claim. The doctrine of claim differentiation therefore
9 weighs further against Defendants’ proposed construction. *See Wenger Mfg., Inc. v.*
10 *Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001) (“Claim differentiation,
11 while often argued to be controlling when it does not apply, is clearly applicable when
12 there is a dispute over whether a limitation found in a dependent claim should be read
13 into an independent claim, and that limitation is the only meaningful difference between
14 the two claims.”).

15 Finally, Defendants cite the original patent application and the prosecution history,
16 arguing that “[t]he scope of claim 1 was only narrowed more than eight years later when
17 the ‘wherein . . . on a second different channel’ term was added to the claim with the
18 examiner’s amendment included in the Notice of Allowance, suggesting that any
19 redundancy was likely an unintentional byproduct of the last-minute amendment.” (Def.
20 CC Opening at 28 (discussing Ex. 8, Application at 40–66 (pp. 42–68 of 211 of Ex. 8);

1 discussing *id.*, July 16, 2012 Notice of Allowance at 2–6 (pp. 205–209 of 211 of Ex. 8).)
2 Plaintiff points out, however, that the distinct usage of “responsive to” in some claims
3 and “while” in certain dependent claims is apparent in the original claims of the patent
4 application. (*See id.*, Application at pp. 42, 44, 45–46 (pp. 44, 46 & 47–48 of 211 of
5 Ex. 8) (application claims 9, 20, 27, and 31). Defendants identify no definitive
6 statements in the prosecution history that would warrant limiting “responsive to” to
7 mean “while.” *See Omega Eng’g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir.
8 2003) (“As a basic principle of claim interpretation, prosecution disclaimer promotes the
9 public notice function of the intrinsic evidence and protects the public’s reliance on
10 definitive statements made during prosecution.”).

11 The Special Master therefore hereby expressly rejects Defendants’ proposed
12 constructions, and no further construction is necessary. *See O2 Micro Int’l Ltd. v.*
13 *Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict
14 courts are not (and should not be) required to construe every limitation present in a
15 patent’s asserted claims.”); *see also Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d
16 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the
17 parties’ quarrel, the district court rejected Defendants’ construction.”); *Bayer Healthcare*
18 *LLC v. Baxalta Inc.*, 989 F.3d 964, 977–79 (Fed. Cir. 2021).

19 The Court therefore hereby construes “**responsive to**” to have its **plain meaning**.
20

6. “one other access point,” “the other signal,” “the access point,” and “the signal”

<p style="text-align: center;">“one other access point” (’939 Patent, Claims 1, 7–8)</p> <p style="text-align: center;">“the other signal” (’939 Patent, Claim 1)</p>	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	Indefinite
<p style="text-align: center;">“the access point” (’939 Patent, Claims 1, 4–5, 33–34)</p>	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“the first access point”	Indefinite
<p style="text-align: center;">“the signal” (’939 Patent, Claim 1)</p>	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“the first signal”	Indefinite

(Dkt. 255-1 at 18.)

(a) The Parties’ Positions

Plaintiff argues that “the claim context confirms the scope of ‘one other access point.’” (Pl. CC Opening at 29.) Plaintiff argues that “there is no confusion what ‘the other signal’ means,” “[f]or example, there is not a different ‘other signal’ in claim 1 that the term could refer back to.” (*Id.* at 29–30.) Plaintiff further argues that “[t]he claim

1 context makes clear that ‘the access point’ in each of these claims refers to the access
2 point that ‘is receiving the signal’ in independent claims 1 and 23, paralleled in
3 dependent [claims] 4–5 and 33–34 by the further description of ‘the signal received by
4 the access point.’” (*Id.* at 30.)

5 Defendants argue: “Without proper antecedent basis, there are multiple possible
6 interpretations of the claims. Vivato attempts to rewrite the claims now tellingly picking
7 the interpretations that most comport with its infringement theories. This is improper
8 and XR should not be permitted to rewrite them now.” (Defs. CC Opening at 30.)

9 Plaintiff responds: “As supported by the unrebutted testimony of Dr. Wojcik
10 [(Plaintiff’s expert)], each of these terms, when read in context and in light of the
11 specification, has a clear meaning, and is thus not indefinite.” (Pl. CC Response at 23.)

12 Defendants respond: “XR is asking the Court to put itself in the shoes of the
13 *examiner* to determine what the *examiner* thought the invention was when they revised
14 the claim language. Without proper antecedent basis—which all agree does not exist—a
15 POSITA could not determine which of the possible ‘signals’ or ‘access points’ to which
16 the claims are referring. The claims are therefore indefinite.” (Defs. CC Response
17 at 25.)

18 At the January 18, 2022 hearing, the parties submitted this term on the briefing
19 without oral argument.
20

1 (b) Analysis

2 The specification provides various disclosures regarding access points and signals,
3 such as the following:

4 When an access point 402(w) is ascertained to be receiving a signal, signal
5 transmission/reception coordination logic 404 is capable of restraining (e.g.,
6 limiting, preventing, delaying, etc.) the transmission of signals on the other
7 access points 402(1 . . . w-1, w+1 . . . N). It should be noted that “w” can
8 be equal to 1 or N and that the other access points 402 reduce to access
9 points 402(2 . . . N) and 402(1 . . . N-1), respectively.

10 Exemplary techniques for ascertaining whether a signal is being received
11 and for restraining the transmission of signals are described further below.
12 The monitoring, ascertaining, and restraining of signals can be based on
13 and/or responsive to a myriad of factors. For example, the signals can be
14 coordinated (e.g., analyzed and controlled) based on a per-channel basis.
15 Such exemplary factors are also described further below.

16 FIG. 5 is a flow diagram 500 that illustrates an exemplary method for using
17 an access station having signal transmission/reception coordination logic for
18 multiple access points. Flow diagram 500 includes three (3) blocks 502-
19 506. The actions of flow diagram 500 may be performed, for example, by
20 an access station (e.g., an access station 102 of FIG. 4).

At block 502, multiple access points are monitored. For example, access
points 402(1 . . . N) may be monitored by signal transmission/reception
coordination logic 404 (e.g., to detect signal reception). At block 504, it is
ascertained that an access point of the multiple monitored access points is
receiving a signal. For example, it may be ascertained by signal
transmission/reception coordination logic 404 that an access point 402(1) of
multiple access points 402(1 . . . N) is receiving a signal via a wireless I/O
unit 206.

At block 506, the other access points of the multiple monitored access
points are restrained from transmitting a signal. For example, signal
transmission/reception coordination logic 404 may restrain access points
402(2 . . . N) from transmitting a signal. In a described implementation,
signal transmission/reception coordination logic 404 may restrain access

1 points 402(2 . . . N) from transmitting signals until access point 402(1)
2 ceases receiving the signal.

3 With reference again to FIG. 4, one access point 402 (and/or
4 communication beam 202) may operate on a different channel from that of
5 another access point 402 (and/or communication beam 202). If the different
6 channels are adjacent and/or not sufficiently-well defined, it may be
7 beneficial to restrain transmission on a first channel with a first access point
8 402 even when receiving a wireless communication on a second different
9 channel with a second access point 402. In another exemplary
10 implementation for different channel situations, signal
11 transmission/reception coordination logic 404 may restrain transmission on
12 one channel on the basis of reception on another channel with an ongoing
13 transmission on a third channel to prevent (e.g., inter-modulation) distortion
14 to the signals being communicated in the wireless system.

15 '939 Patent at 6:1–53.

16 Claim 1 of the '939 Patent, for example, recites (emphasis added):

17 1. An apparatus comprising:

18 a wireless input/output (I/O) unit that is configured to establish a
19 plurality of access points; and

20 signal transmission/reception coordination logic that is capable of
ascertaining, by monitoring the plurality of access points for received
signals, that *a first access point of the plurality of access points* is receiving
a first signal and that is adapted to restrain at least *two other access points*
of the plurality of access points from transmitting *signal* responsive to the
ascertaining that *the first access point* is receiving *the first signal*;

wherein the signal transmission/reception coordination logic restrains
at least one other access point of the plurality of access points from
transmitting *the other signal* on a first channel responsive to the
ascertaining that *the access point of the plurality of access points* is
receiving *the signal* on a second different channel.

The recital of a “first access point,” “two other access points,” and “at least one
other access point” does not give rise to any ambiguity. The opinions of Plaintiff’s
expert are further persuasive in this regard. (See Pl. CC Opening, Ex. 4, Nov. 2, 2021

1 Vojcic Decl. at ¶ 146.) Also, above-reproduced Claim 1 of the '939 Patent imposes no
2 restriction as to whether “at least one other access point” is one of the “two other access
3 points.” (*See id.* at ¶ 150.) The Special Master hereby expressly rejects Defendants’
4 indefiniteness arguments as to “one other access point.” Defendants present no
5 alternative proposed construction for this term, so the Special Master construes this term
6 to have its plain meaning. This same analysis also applies to Claims 7 and 8, which
7 depend from Claim 1.

8 Also, although “the access point” lacks any explicit antecedent basis, the implicit
9 antecedent basis is reasonably clear because “the ascertaining” refers back to the
10 “ascertaining” and “receiving” that are recited as to “a first access point.” Thus, the
11 claim is reasonably clear that “the access point” refers back to “a first access point.” *See*
12 *Energizer Holdings Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006)
13 (holding that “an anode gel comprised of zinc as the active anode component” provided
14 implicit antecedent basis for “said zinc anode”). This analysis applies to above-
15 reproduced Claim 1 as well as Claims 4–5, which depend from Claim 1, and Claims 33
16 and 34, which depend from Claim 30.

17 As to the recital of “the signal” near the end of above-reproduced Claim 1 of the
18 '939 Patent, however, the claim fails to provide sufficiently clear antecedent basis, and
19 the term is therefore ambiguous. Plaintiff cites the general principle that a phrase
20 introduced by “the” does not require explicit antecedent basis if a person of ordinary

1 skill in the art would understand the claim in light of the specification. *See, e.g., In re*
2 *Skvorecz*, 580 F.3d 1262, 1268–69 (Fed. Cir. 2009).

3 On balance, however, the claim language is unclear as to whether “the signal”
4 refers to “the first signal,” “the other signal,” or some other signal. This ambiguity gives
5 rise to indefiniteness. *See, e.g., Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d
6 1244, 1249 (Fed. Cir. 2008) (“a claim could be indefinite if a term does not have proper
7 antecedent basis where such basis is not otherwise present by implication or the meaning
8 is not reasonably ascertainable”) (citation omitted). That is, this claim “fail[s] to inform,
9 with reasonable certainty, those skilled in the art about the scope of the invention.”
10 *Nautilus*, 572 U.S. at 901. The opinions of Plaintiff’s expert to the contrary are
11 unpersuasive. (*See* Pl. CC Opening, Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶¶ 159–63.)

12 In addition, “the other signal” is itself unclear because the claim provides no
13 antecedent basis. Perhaps a person of ordinary skill in the art could infer that “the other
14 signal” is a signal other than “the first signal,” but this is not sufficiently clear on the
15 face of the claim, and Plaintiff does not persuasively show that the proper interpretation
16 would be clear to a person of ordinary skill in the art. Also, Plaintiff’s expert opines that
17 a person of ordinary skill in the art would understand that “the other signal” corresponds
18 to a signal that the “other access point” is restrained from transmitting (*see* Pl. CC
19 Opening, Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶¶ 155–56), but this interpretation lacks
20 sufficient support in the claim language and does not overcome the lack of any

reasonably clear antecedent basis for “the other signal.”

The Special Master therefore finds that, based on lack of any reasonably clear antecedent basis for “the signal” and “the other signal,” Claim 1 of the ’939 Patent is indefinite.

The Special Master therefore hereby construes these disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“one other access point”	Plain meaning
“the access point”	The term “the access point” refers back to “a first access point” for antecedent basis.
“the other signal” “the signal”	Indefinite

7. “at least one IEEE 802.11 standard”

“IEEE 802.11 standard” (’939 Patent, Claims 3, 19, 32)	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	Indefinite

(Dkt. 255-1 at 19.)

1 (a) The Parties' Positions

2 Plaintiff refers to its arguments as to the similar term “802.11 standard” in the
3 ’376 Patent, which is discussed above. (Pl. CC Opening at 31.)

4 Defendants argue that “the ’376 and ’939 Patents do not explain what it means to
5 ‘operate in accordance with’ ‘an’ 802.11 standard,” and “[w]hile both patents use the
6 term ‘operate in accordance with,’ they never explain what is necessary to meet that
7 phrase.” (Defs. CC Opening at 29.) Defendants also submit that “the specifications do
8 not refer to a particular IEEE 802.11 standard as of a particular time” (*Id.*)

9 Plaintiff responds, in full: “This term is addressed in section I.D above. Like the
10 ’376 patent, the ’939 patent describes and gives examples of the 802.11 standard. *See*
11 ’939 Patent at 1:41–46 (Wireless LANs “*may operate in accordance with IEEE 802.11*
12 *(e.g., 802.11(a), (b), (e), (g), (k), (n), etc.)* or other wireless network standards.”). And
13 like for the ’376 patent, Defendants provide no evidence that a POSA would encounter
14 this term and not be able to understand its scope with reasonable certainty.” (Pl. CC
15 Response at 24.)

16 Defendants respond as to this term together with the substantially same term in the
17 ’376 Patent. (*See* Defs. CC Response at 22–23.)

18 At the January 18, 2022 hearing, the parties presented oral arguments regarding
19 this term.

(b) Analysis

For the same reasons discussed above as to the term “an 802.11 standard” in the ’376 Patent, the Special Master hereby expressly rejects Defendants’ indefiniteness argument. *See, e.g.*, ’939 Patent at 1:41–46 (“may operate in accordance with IEEE 802.11”). The Special Master likewise construes this disputed term as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“at least one IEEE 802.11 standard”	“at least one of the IEEE 802.11 standards that existed at the time of the invention”

VII. THE DISPUTED TERMS IN U.S. PATENT NO. 7,729,728

8. “a beam downlink” and “[a]/[the] different beam downlink”

<p>“a beam downlink” (’728 Patent, Claims 1, 7)</p>	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	“a first available beam transmitted by said phased array antenna”

<p style="text-align: center;">“[a]/[the] different beam downlink” (’728 Patent, Claims 1, 7)</p>	
Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
No construction necessary.	“[a/the] second available beam transmitted by said phased array antenna”

(Dkt. 255-1 at 19.)

(a) The Parties’ Positions

Plaintiff argues that “Defendants cannot show any lexicography or disclaimer that the word ‘downlink’ should be redefined and limited as they propose.” (Pl. CC Opening at 31.) For example, Plaintiff argues that “Defendants’ insertion of ‘available’ appears to be mere surplusage” in light of other claim language. (*Id.* at 32.) Plaintiff also argues that “the specification never uses Defendants’ phrase ‘transmitted by’ in connection with the phased array antenna transmitting anything.” (*Id.*)

Defendants argue that “[f]or the receiving device to be able to associate with one or the other beam downlinks, the beams must be transmitted by the phased array antenna and therefore available for such association,” and “[t]he specification confirms that the claimed beams must be ‘available’ beams.” (Defs. CC Opening at 32.) Defendants urge that “[t]o assess the strength of the beams and, therefore conduct the switching determination, the beams must be transmitted and available, otherwise, they could not have been measured.” (*Id.*)

1 Plaintiff responds that “[t]he claims mean what they say, and there is no reason to
2 add incorrect or (at best) redundant words to the claim.” (Pl. CC Response at 25.)
3 Plaintiff argues that “Defendants’ proposed construction[s] are either literally duplicative
4 of existing claim language or an improper attempt to limit the claims to one disclosed
5 embodiment, and not even a preferred embodiment.” (*Id.*)

6 Defendants respond that “XR agrees that Defendants’ constructions of these terms
7 are consistent with the specification,” and Defendants argue that construction would not
8 be redundant but rather would clarify these claim terms for the jury. (Defs. CC
9 Response at 25.)

10 At the January 18, 2022 hearing, the parties submitted these terms on the briefing
11 without oral argument.

12 (b) Analysis

13 These disputed terms appear in Claims 1 and 7 of the ’728 Patent, which recite
14 (emphasis added):

15 1. A method for use in a wireless communication system, the method
16 comprising:

17 selectively allowing a receiving device to operatively associate with
18 *a beam downlink* transmittable to the receiving device via a phased array
19 antenna of an access point;

20 receiving an uplink transmission from the receiving device through
the phased array antenna;

determining from the uplink transmission if the receiving device
should operatively associate with *a different beam downlink* transmittable
via the phased array antenna;

allowing the receiving device to operatively associate with *the*
different beam downlink if determining that the receiving device should

1 operatively associate with *the different beam downlink*;
2 actively probing the receiving device by generating a signal to initiate
3 that the phased array antenna transmit at least one downlink transmittable
4 message over *the different beam downlink*, and gathering signal parameter
5 information from uplink transmittable messages received from the receiving
6 device through the phased array antenna.

7 * * *

8 7. A method for use in a wireless communication system, the method
9 comprising:

10 selectively allowing a receiving device to operatively associate with *a*
11 *beam downlink* transmittable to the receiving device via a phased array
12 antenna of an access point;

13 receiving an uplink transmission from the receiving device through
14 the phased array antenna;

15 determining from the uplink transmission if the receiving device
16 should operatively associate with *a different beam downlink* transmittable
17 via the phased array antenna;

18 forcing the receiving device to operatively associate with *the different*
19 *beam downlink* if determining that the receiving device should be
20 operatively associated with *the different beam downlink*;

 transmitting at least one probe message to the receiving device over
 the different beam downlink;

 receiving at least one uplink transmitted probe response message
 from the receiving device through the phased array antenna; and

 gathering signal parameter information from the uplink transmitted
 probe response message.

 As a threshold matter, Defendants’ proposal of “transmitted by said phased array
antenna” is redundant or potentially inconsistent with other claim language, such as the
phrase “transmittable to the receiving device via a phased array antenna of an access
point” in the above-reproduced claims.

 As to Defendants’ proposal of “available,” the Background section of the
specification discloses “re-associat[ing]” with a different “beam” (emphasis added):

1 [F]or wireless communication systems that use smart antennas that produce
2 significantly more narrow and directed beams, the receiving device may not
3 always be able to determine when it should switch its association from one
4 beam to another beam. One potential reason for this is that the receiving
5 device may have moved into an area that is covered by a side lobe of the
6 main intended beam. While the receiving device and access point may be
7 able to continue to communicate via a side lobe in certain situations, it will
8 usually be more preferable for the receiving device to re-associate with
9 another intended main beam that provides coverage to the new location of
10 the receiving device.

11 '728 Patent at 2:28–39 (emphasis added). The Summary section of the specification
12 then states:

13 Methods and apparatuses are provided [*sic*, provided] which allow a wireless
14 communication system using a smart antenna(s) to selectively cause a
15 receiving device to switch its operative association from one transmitted
16 beam to another *available* transmitted beam.

17 *Id.* at 2:54–58 (emphasis added). The Detailed Description further states:

18 In act 208, the client device is forced or otherwise made to associate with a
19 different main beam. For example, in certain implementations beam
20 switching logic 110 may be configured to temporarily halt transmission of
at least the main beam 116 to which client device 104 is currently
associated with. The resulting loss of signal in this case will require
communication logic 118 to attempt to associate with an available main
beam. This act of “shutting off” a beam may not provide the best solution,
however, in some configurations.

Another technique that can be employed to achieve act 208 is to configure
beam switching logic 110 to cause transceiver 112 send some form of
disassociate information to client device 104 over the current associated
main beam. In response to receiving the disassociate information (possibly
via a side lobe), communication logic 118 will initiate a new association
process. To prevent communication logic 118 from simply trying to re-
associate with the same main beam again, beam switching logic 110 may
also be configured to *selectively disallow the attempted re-association
request*.

1 *Id.* at 7:44–63 (emphasis added); *see id.* at 6:24–46; *see also id.* at Abstract (“using a
2 smart antenna(s) to selectively cause a receiving device to switch its operative
3 association from one transmitted beam to another *available* transmitted beam”) (emphasis added); *id.* at 1:19–24 (similar).

4
5 Defendants cite the opinion of Plaintiff’s expert that “a POSITA would understand
6 ‘available’ to mean that the beam is one that a receiving device is allowed to operatively
7 associate with,” but Plaintiff’s expert also opines: “That requirement is already stated in
8 the existing claim language. Adding the word ‘available’ to the claim term, as
9 Defendants request, does not add any meaning to the claim that was not already there.”
10 (Pl. CC Opening, Ex. 4, Nov. 2, 2021 Vojcic Decl. at ¶ 193.) The opinion of Plaintiff’s
11 expert is persuasive in this regard. Although the above-cited disclosures, such as
12 regarding “selectively disallow[ing] the attempted re-association request” (*id.* at 7:63),
13 appear to be consistent with Defendants’ proposal of an “available” beam, Defendants’
14 proposal of “available” is descriptive of other language set forth in the claims, such as
15 “allowing” (Claim 1) or “forcing” (Claim 7) in the above-reproduced claims.

16
17 The Special Master therefore hereby expressly rejects Defendants’ proposed
18 constructions, and no further construction is necessary. *See O2 Micro*, 521 F.3d at 1362
19 (“[D]istrict courts are not (and should not be) required to construe every limitation
20 present in a patent’s asserted claims.”); *see also Finjan*, 626 F.3d at 1207 (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected

Defendants' construction."); *Bayer*, 989 F.3d at 977–79. The authority cited by Defendants, that “[i]t is critical for trial courts to set forth an express construction of the material claim terms in dispute, in part because the claim construction becomes the basis of the jury instructions,” *AFG Indus., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001), is unpersuasive in light of the above-cited more recent authorities.

The Special Master therefore hereby construes these disputed terms as follows:

<u>Term</u>	<u>Construction</u>
“a beam downlink”	Plain meaning
“[a]/[the] different beam downlink”	

VIII. CONCLUSION

The Special Master hereby construes the disputed terms as set forth above.

Date: January 27, 2022


David Keyzer
Special Master